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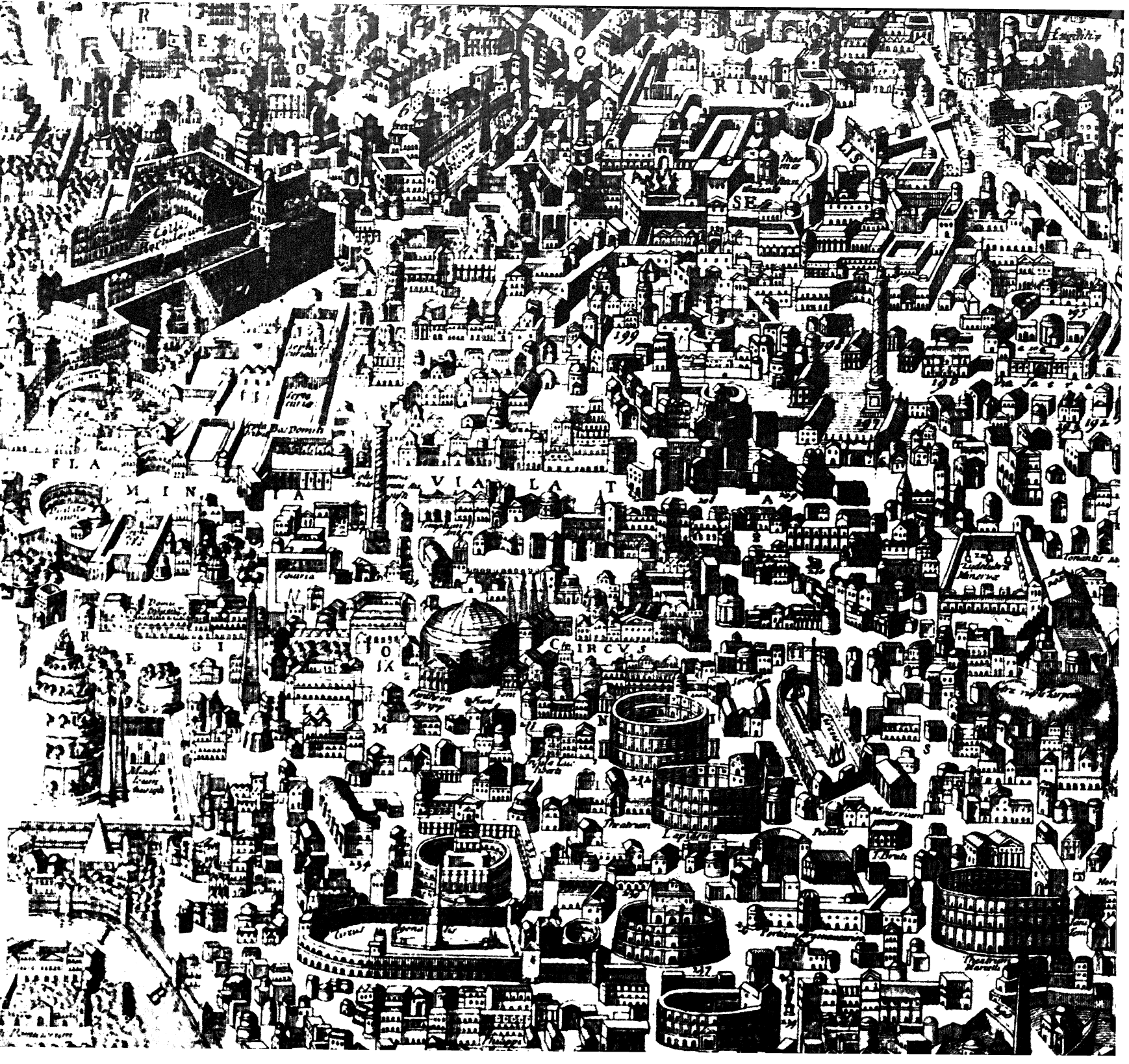
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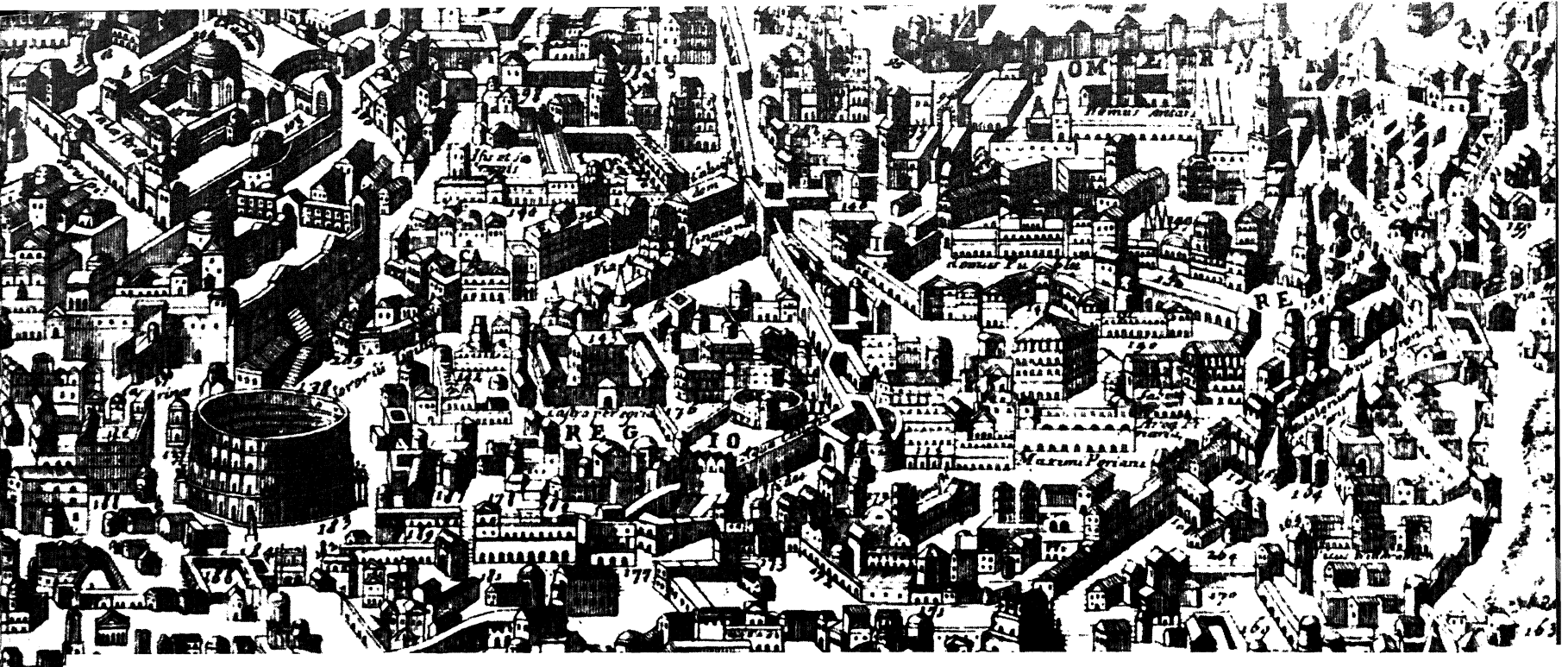

A visual introduction to the form and function of the city

THE LANGUAGE OF CITIES

FRAN P. HOSKEN

SOCIAL STUDIES
CURRICULUM LIBRARY

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PREFACE TO SECOND EDITION

It is more than four years since the final version of this book was completed. Its message has become even more urgent and important in the context of a rising concern for the environment.

This great concern about pollution of our natural environment has swept not only the U. S. but the entire world. Pollution—air, water and noise pollution—is not only being discussed, but effective action is being taken in many areas. Yet the greatest polluter of our life is *how* we build our environment: the planless, uncoordinated way in which land is developed, disregarding human needs, disregarding a rational and regional approach.

Land is urbanized and developed according to what is most profitable for the individual developer instead of according to what is in the public interest or what is best for the majority. There are few controls or safeguards to keep attractive areas in their natural state. Urbanization is spreading and eating up land, but there are no coordinated regional plans to direct this growth rationally.

As early as 1969, the National Committee on Urban Growth Policy* set down as its goal the creation of at least ten planned communities of about one million people each and 100 new communities averaging 100,000 people each. Planned communities must be based on a national urbanization strategy that channels population growth away from the existing overgrown metropolitan areas which are the worst polluters. New communities using modern technology can now be built to create a minimum of pollution and can be planned to answer human needs, including the needs of a plural society. Little has been done so far even to begin to create the legal framework for such an effort that needs broad national support.

Our metropolitan areas, in the meantime, grow wastefully, haphazardly, and without the controls that are needed to safeguard the environment. There are no incentives to create a healthy, sound and beautiful environment that answers human needs. It is seldom mentioned that environmental pollution is the result of unplanned urban growth and of building shoddy, cheap, badly designed structures. Water, air, and noise pollution are the direct result of planless urbanization and growth.

The inner city inhabitants, the minorities, and the poor suffer most from the appallingly ugly, malfunctioning, deteriorating urban environment which was built without any regard for human and environmental needs. By now *all* who use, work and live in metropolitan areas are affected because pollution reaches everywhere. When shall we learn that the man-made pollution of planless urban growth is the greatest danger to our future?

There are better ways to deal with our growing population. One is to create new settlements that are planned to give more choices and new alternatives in housing and jobs and offer many different ways of life. Many European countries are creating planned new settlements that offer many new ways of urban living: towns with built-in pollution controls, environmental protection, and many choices for human development. Vaudreuil, outside Rouen in France, is a new town planned for a pollution-free new environment, planned with vast government support and built with the cooperation of industry, using new recycling methods and putting into practice new technology and ideas.

The building of a new environment, new urban systems, and new kinds of shelter is not only needed by a growing number of people, but also could provide a new national purpose. It is a goal worthy of the best scientific and technical efforts soundly based on human social values and needs. A major national program of rationally coordinated urban development, planned on a regional basis for the whole country, could create millions of jobs and provide a positive, useful answer to the problems of doubt and frustration, unemployment, and inflation that are plaguing the country. It also could create the many different choices that our plural society needs but which our present segregated cities deny.

It will take a great deal of work and time and leadership to plan such an effort. It will take a national commitment and the marshalling of vast resources to carry out the rebuilding of our environment. These resources are now recklessly squandered on destruction, war, and armaments. We have been eminently successful in planning for space flights and death. What better way to spend our national treasure than to build a new environment for a new life?

*National Committee on Urban Growth Policy. *The New City* (Donald Canty, Editor). Published for Urban America, Inc., by Frederick Praeger, Inc., 1969.

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Continuous urbanization

PREFACE

Our society is becoming more and more urbanized. All over the world people migrate to the cities:* their wealth and economic production set the style and pattern of our life. The cities' concentration of talent and manpower create the civilization, institutions, and culture of our world.

As Aristotle said, people come to the city to find safety and happiness, "to lead the good life." As yet we have no better way to express the goals of our democratic urban society. The purpose of the city is to increase the choices for personal satisfaction—the choices for work and jobs, health and recreation, education and culture—and to fulfill our personal goals. Mobility, which in the physical sense is transportation, is a means to this end.

In the next thirty years in the United States, we shall have to build as much as in the entire history of the country. This will be necessary to acommodate the growing millions and to replace the buildings that have decayed. Our urban population is not only naturally increasing; more people are moving from rural areas into the growing metropolitan centers because they offer more jobs. Soon 75 percent of our population will live in urban areas of one kind or another. This means that in future people will live closer together; more people will have to share the same facilities and space. Therefore we must respect our neighbors and we must make better and more economic use of the land, especially near the densely populated centers.

Soon continuous urbanized areas will stretch along both the east and west coasts, punctuated by the city centers. The Great Lakes region and Florida are following the same trend.

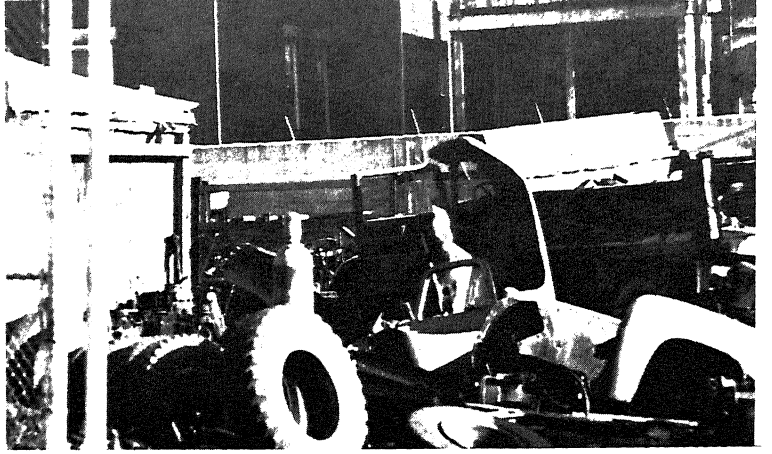
We must find ways to live in dignity and order in the coming age of the urban megalopolis, and we must plan a human environment that encourages the individuality of man without infringing on the freedom of his neighbors.

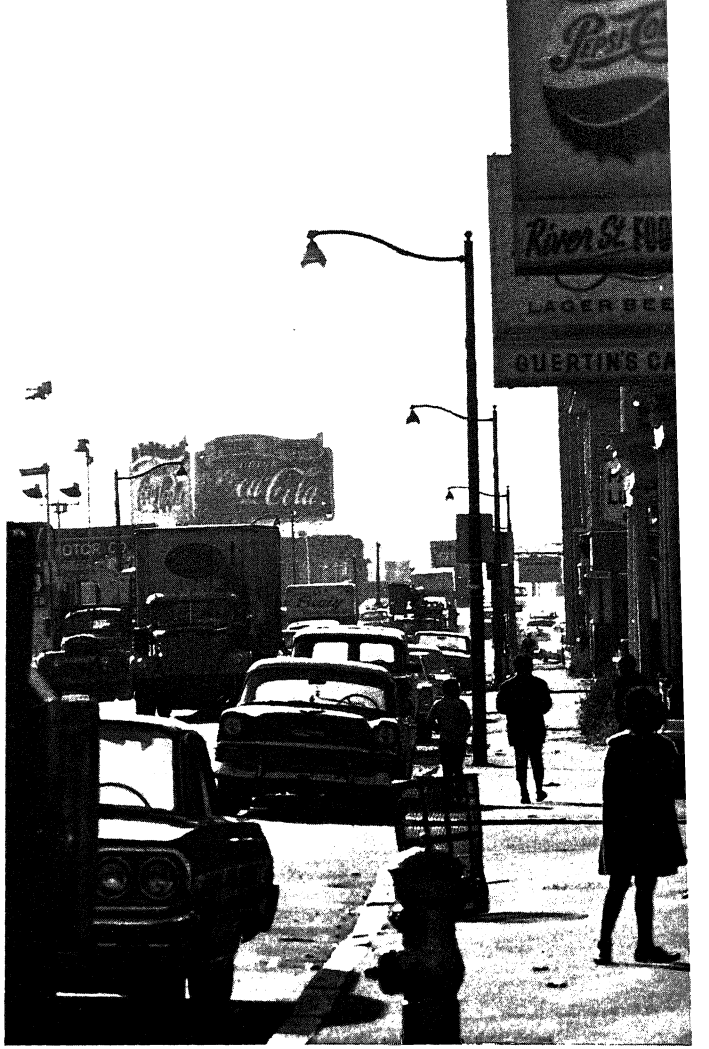
By spreading urban development over ever larger areas of land, we lose the personal contact that makes the city into a community that is really alive. We must control the rapidly spreading cities and make them not only into well-functioning places to live in but also into urban centers that provide joy and beauty to uplift the hearts and the spirit of man.

We must plan for the future; we can no longer afford the philosophy of waste, the idea that "there is lots more land elsewhere." Because soon there will be no more elsewhere, certainly not in the metropolitan areas. Poorly planned and badly developed land is a loss to the whole community; uneconomic land use increases the tax burdens for everyone. Polluted air and water and the waste of natural land have become problems in cities everywhere. But the loss of amenity and beauty, of that kind of usefulness which provides pleasure and inspiration appears on no budget and in no account. In the older cities even the poorest man could take a walk out into the country or enjoy his own beautiful city center or cathedral square—and take part in the city's public festivities and celebrations. Many people have no such choice today.

This is the challenge: to control our man-made environment and to create a better life here and now. The way of this life is urban and constantly changing due to our changing technology and new scientific ideas. With it the function of the

*The term "cities" is used in place of urban environment, as the opposite of "country" or rural environment.

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city is changing, mainly as a result of communication and transportation, which have changed our concepts of time and space. While change seems to be the only thing that is certain, the man-made physical world is left more and more behind. We live already in a future of ideas and scientific inventions that hardly is reflected in the design of our cities or in our everyday urban environment.

But human nature changes little and very slowly. Our age-old needs remain the same: the need for love and family, for community and privacy are ever present. The key to a successful city still is personal contact and face-to-face communication. Electronic communication is no substitute for mingling with people or for the feelings created by the happy company of men.

The city should offer more of life and a better living, personal safety, protection and security, participation in communal goals, the potential for learning and growing and for the pursuit of individuality. The city should stand for freedom and liberation, for a diversity of people and ideas, for man's highest aspirations, and the achievement of excellence and quality. The community should be the human organization that enables men to live in harmony; the city should be the man-made environment that shelters the community and protects the individuality of man.

But what has happened to cities today? What has become of the need for community and communication, of the dream of order and civilization, of the longing for culture and the desire for control over man's environment and destiny? To gain more profit, we often trade human scale, indeed humanity. In order to move from place to place faster, we often destroy the very fabric of the city. The increasing size of the city supports specialization at the expense of personal interchange. The city is a conflict of values, a producer of great riches and appalling poverty, the loftiest ideals and lowest degradation. Intense competition lives side by side with cooperation; beauty is next door to banality.

In the last thirty years metropolitan areas in the United States have become more and more segregated; by income and race and by fear and prejudice. Middle-class people have moved to new housing in the suburbs and have left the worn out, obsolete housing in the older parts of the cities to the poor and the racial minorities. Racial discrimination and lack of communication threaten to destroy the cities' way of life. Cities must be open to all kinds of people and a variety of ideas. The city as a community was created in the image of the diversity and plurality of man.

The quality of urban life depends on people, on all the inhabitants of the city, rich or poor. People are the generators of new ideas and the creators of a new environment for living. The time has come to evaluate the future of the cities from the experience of the past, because in the next decades we shall have to build and rebuild on an unprecedented scale.

The new kinds of cities which will have to be built or rebuilt must be based on rational planning for an integrated, diversified urban society. That is, planning must be for the public good rather than individual profit with new housing open and financially available to everyone. But the new cities also must be built to new standards of quality and beauty, using the new technology which we already possess.

In building a new environment, we should remember that what our vision and imagination create as forms, as the "container" for our way of life, slowly and imperceptibly becomes animated and develops a life and power of its own. The argument about the interaction between man and the man-made environment has never been fully explored or settled. To perceive and understand this interaction depends in part on our ability to see, to evaluate the qualities of cities, which are expressed in a visual language that we can learn to read.

By learning to see better and more clearly what surrounds us here and now, we shall also learn to see into the future and to see with the eyes of our imagination. This is what is most urgently needed now, to create a new quality of life and a new environment which go together. This book may provide some tools for both: for seeing the present and the future, for view and vision, for seeing what we have and for what is to come.

We should learn to understand the language of cities because we are caught up in the urban life, and as we change cities they change our nature. By learning to perceive cities we can learn to create a better urban life and environment for the future, because cities are made in the image of man. They clearly reflect our own qualities, shortcomings, values, and way of life.


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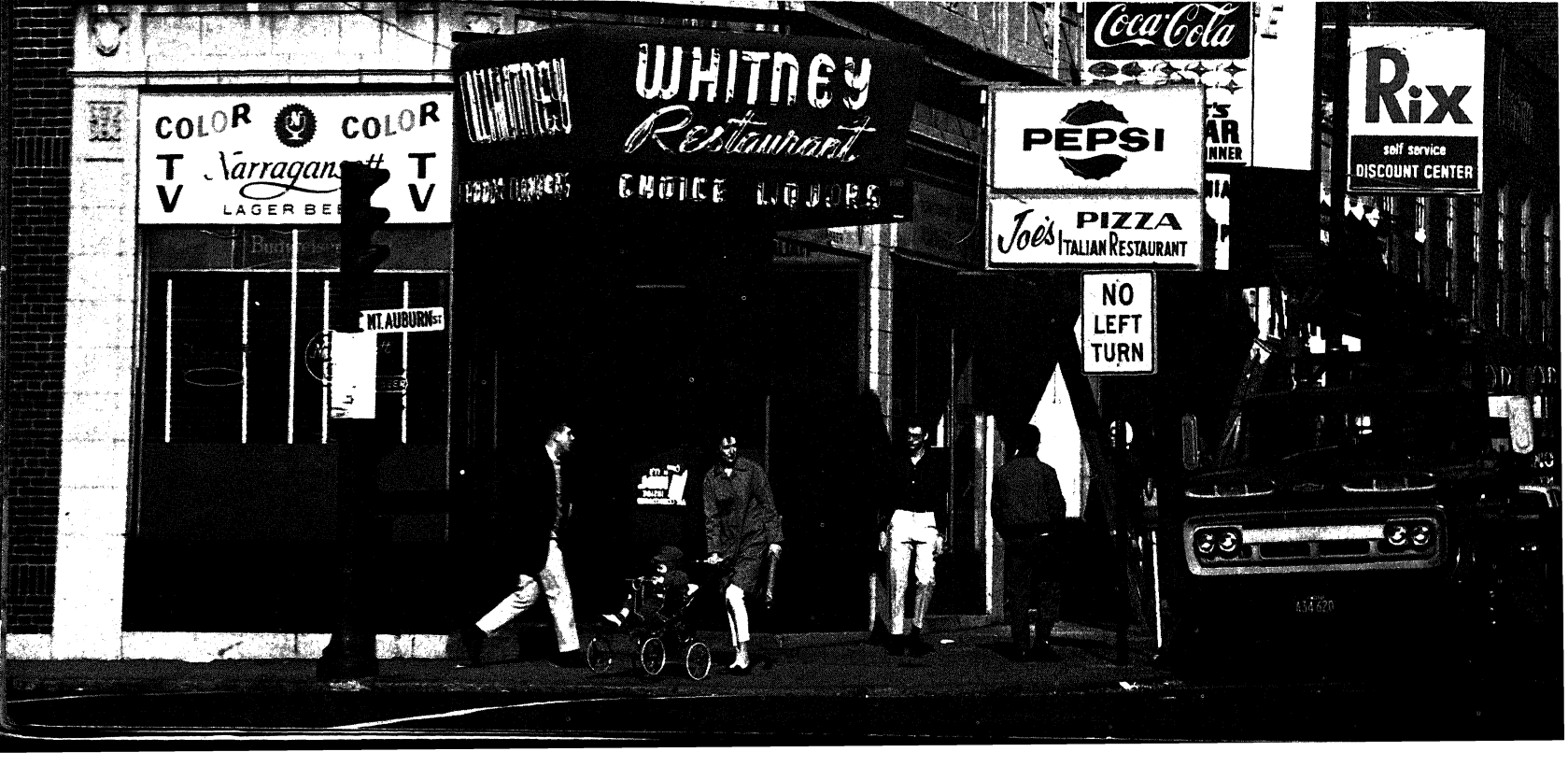
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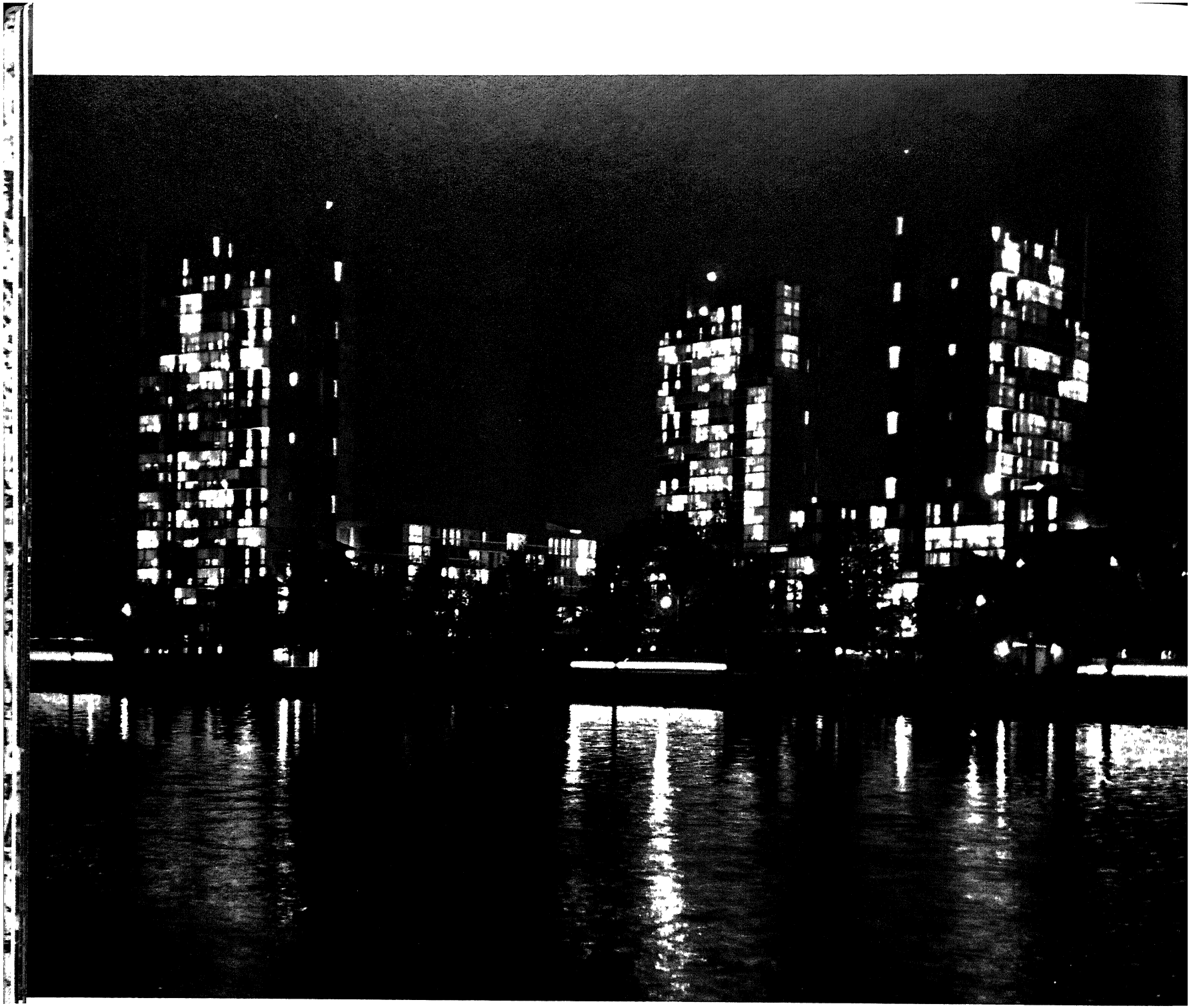


INTRODUCTION

The Function of Cities

The purpose of this book is to supply some of the tools for seeing the urban world in which most of us live today and to show the reasons why it is important that we understand the urban environment which we see.

Cities speak to us in their own language, the visual language of the physical world. Without learning its alphabet, this visual language has no meaning. Its vocabulary is made of brick and stone, steel and concrete, asphalt and electricity. But without the people the city is an empty shell; the life of the city is the people. Only after learning the visual language of the cities of today can we proceed to write our own story and shape the cities for tomorrow, based on a new technology and a new concept of life.

The environment is an education to those who are able to understand its language. We are influenced unconsciously by what surrounds us; but only by consciously perceiving what we see can we decipher its message and ultimately create our own message and world.

At present, because we can't understand the language of cities, we leave their future to others: to the technical experts —city planners, architects, traffic and civil engineers, lawyers, and a host of specialists; to politicians and administrators, but mainly to the private real estate developers. The economic facts dictate that real estate development, like any other business, is done for profit. But what is profitable for the entrepreneur in a limited area is not necessarily what is needed by the whole city or all its inhabitants.

In a democratic society building is too important a task to leave to the decisions of a few, no matter how well intentioned. It needs everyone's interest, active participation, and concern. To participate constructively in city building, we must first of all understand what a city is and why men build cities: We must learn the visual language of cities because it is an expression of their functions over time and it records our values, society, and way of life.

Cities today fulfill many different functions. Some of these functions are in conflict with each other and create great hardship and strife: for example, expressways destroy housing, and beautiful parks can become danger spots. Some functions have continued through history, and others are constantly changing. At present we live once more in a time of fundamental urban change.

Men come together to build cities in answer to their joint needs for community and communication, defense and protection, trade and exchange, worship and government, culture and learning. As Lewis Mumford says: "The city is the form and symbol of an integrated social relationship: It is the seat of the temple, the market, the hall of justice, the academy of learning."

The city is for people, but its basic function, housing, is miserably neglected in many cities today. Cities have always attracted people by offering "the good life," community and a safe place to live, to its inhabitants.

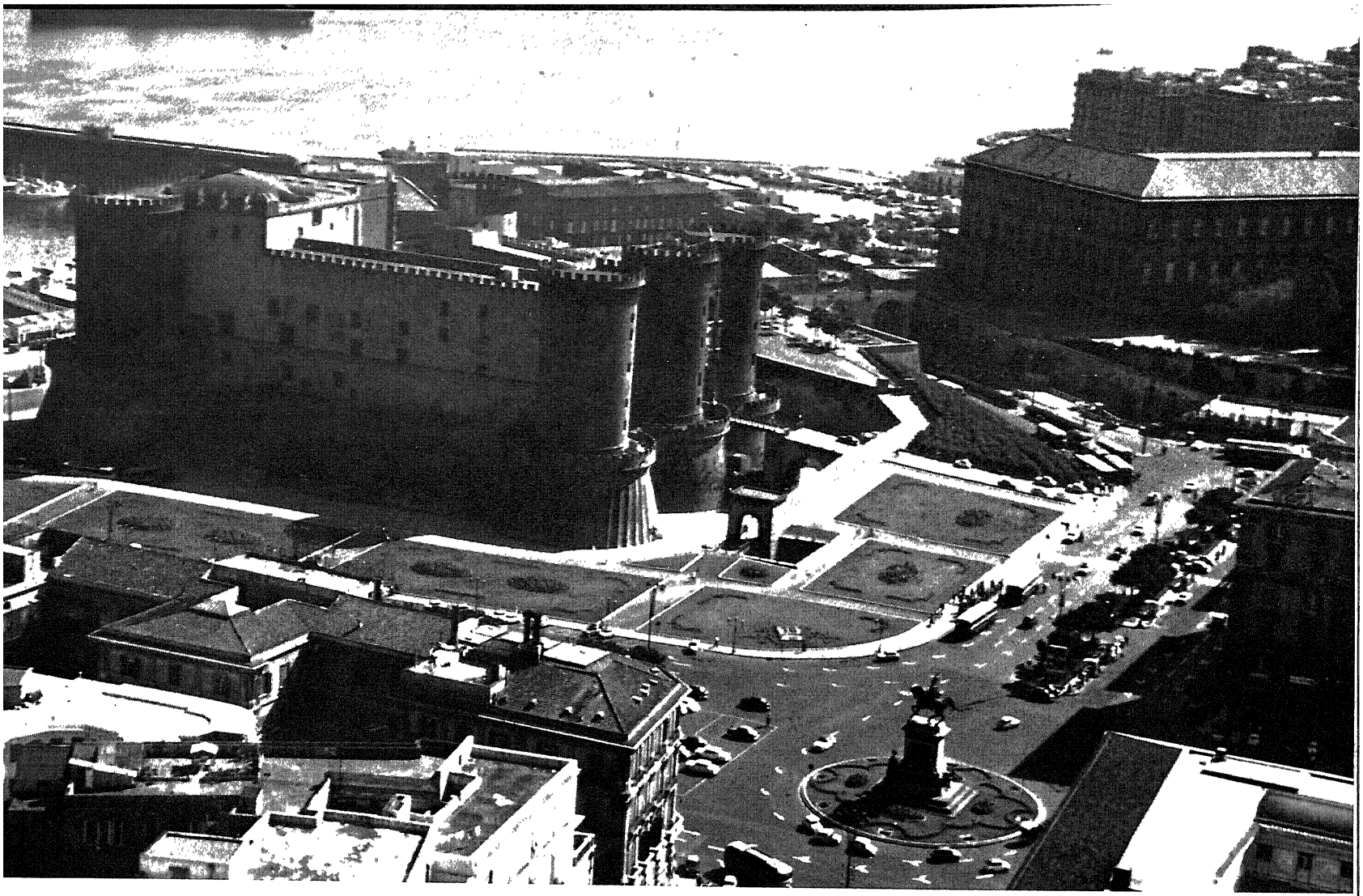
But the essence of the city is diversity and plurality; only in the city do we find all kinds of people and ideas and a multitude of different enterprise.

One of the basic and continuing functions of the city is its **economic function,** both as producer and market place. This function must be linked with transportation: Cities have been built at strategic spots for the exchange of goods: at harbors, river crossings, and trade route intersections. Others started as local or regional market centers for the surrounding countryside. Today the annual markets and trade fairs that are regularly scheduled in certain cities bring together people and business from all over the world.

Cities accelerated the division of labor and encouraged specialization. By now this specialization has increased so that certain cities are known for their concentration of special interests or products, for instance, Lausanne and Geneva for watches, the City of London, Zürich, and New York for banking, Paris for fashions, Salzburg for music and its festival, Manchester for textiles, and Detroit for automobiles.

In the past the market city drew on its immediate surroundings. Now it often draws on a whole country or continent; the more specialized the product the larger the area from which the city draws. For large industries it is no longer profitable to produce for a limited area or small country. The European Common Market was created as one response to this fact.

By now electronic communication and air transport have transcended all natural and man-made barriers. These developments have also greatly changed the market functions of cities and their physical form. The locating of airports in relation to the city centers has become an important economic factor and also influences the location of new industry.



Defense and protection are historic urban functions, which, however, by now are largely obsolete. In ancient times people built heavily fortified cities with storage space for food and provisions to hold out against the frequent raids of enemies and migrating tribes. Early Greek cities like Tiryns and Mycenae were heavily fortified; Sparta was entirely organized for war. The Roman camps created to defend the empire became the outposts of the Roman civilization and were the origin of many present-day European cities and towns, such as Vienna, Marseilles, and Cologne.

Many examples of medieval walled towns in Europe are preserved almost intact: for instance, Siena and Lucca in Italy; St. Paul de Vence, Avignon, or Carcassone in France. As late as 1683, the Turks for the last time besieged Vienna, and only because that city withstood their aggression was the rest of western Europe spared. Gunpowder and modern weapons finally made elaborate walls and defenses functionally valueless.

A prime function of the city throughout history has been as a center for **worship and government.** The temples in cities in

Egypt and Greece and the Roman empire always occupied a very special location. Some towns, such as Delphi and later Lourdes, were created around religious shrines. The medieval cathedral was the spiritual and physical center of town: it was the symbol of man's hopes for a better life after death and also the pride of the community.

The palace as the seat of kings and rulers provided another important physical focus in the city that was often related to the religious one. In ancient times, and until recently also in China and Japan, the rulers were believed to have godlike powers. Consequently their palaces were both sacred and elaborate. The fortified castle, in medieval times, was the last stronghold against the enemies of the cities; the lords with their vassals provided the cities' defense.

The palace increased both in size and importance as visual focus of the city until modern times. In the baroque period the palaces and their formal gardens became the centers of urban life.

Government functions are still concentrated in cities everywhere and still provide an important visual focus. However, except in capital cities, this focus is a relatively minor one compared to some of the major office and business complexes such as Rockefeller Center in New York, the Prudential Center in Boston, or Place Ville Marie in Montreal.

Churches and places of worship now have become a neighborhood function. Their buildings, which used to dominate the cityscape, are visually lost, especially in large city centers where they are overpowered by office buildings.

Transportation has always determined the location of cities. Harbors are the reason for some of the greatest cities of the world, such as London, Rio de Janeiro, Singapore, Istanbul, and virtually all cities on the U. S. coasts. Rivers and trade route intersections created cities from antiquity until now, for instance, Paris, Vienna, Budapest, Prague, Chicago, St. Louis, and many others. But with the coming of air transportation, cities depend less on geography.

Transportation, especially highway construction, today has become the most influential factor of urban development. While the city's size from antiquity until the nineteenth century was limited by the distance man could comfortably walk, new means of transportation—trolleys, trains, subways and lately automobiles, buses and trucks—have enabled people to live in much larger, more spread-out cities. In turn, vertical transportation (elevators) and new construction methods and materials overcame the vertical limitations of building.

While transportation has enabled many people to live outside the central cities, this has resulted in the growing tides of commuters that in turn have resulted in a wave of highway construction. Often highways and expressways have done serious damage to the social and physical fabric of cities, yet without good transportation a city can no longer exist.

Education is a continuing function of the city. By its diversity of people, jobs, and ideas, the city not only acts as educator, but since antiquity it has been the seat of the academy and of scholarship.

The oldest organized universities were in urban centers; for instance, Salerno and Pisa were cities that were well known because of their universities. From medieval times on, universities flourished all over Europe and often became the pacesetting centers of their towns. Oxford University and Cambridge University gave their names to their surrounding towns. The German and Central European universities had their own legislation and special rights and privileges which the city or state was powerless to change.

The urban university today in the United States has become a new kind of urban center, especially since a university education is no longer a privilege but a need for more and more people. Today the urban university and the city share a common future: from the successful cooperation between universities and their urban communities a lively and vital new city center and visual focus may rise.

The **cultural function** of the city is and has been related to the educational one. In ancient Greece and Rome the theater performance was not only a vital function of each city, but also an educational one. The theater site was located in the most important part of town. Often theater performances were related to religious festivals. Until modern times the theater fulfilled an urban community function, gathering people together for an important joint experience.

In the Middle Ages the theater moved into the cathedral or the cathedral square and served, like most communal life, a religious purpose. The communal purpose of the urban theater certainly was also manifested in Shakespeare's time. Later during the baroque period, it became the prerogative of kings and princes to stage great spectacles—often for the citizens of their towns. Live theater now is no longer a community function; its place has been taken by movies and TV which are neither community related nor can they frequently be called cultural contributions.

From antiquity on, the city itself was regarded as a work of art. Making his city more beautiful was considered a prime achievement of its ruler, king, prince, or pope. Ancient Athens and especially Rome are the best examples of this concern. But the pride in the city's buildings and cultural achievements was shared by every man who lived in the town. The best artists were called upon to decorate the cities and make them more beautiful. Now cities have museums to show works of art mainly from the past while the present visual qualities of cities are totally neglected and reflect little more than greed.

Recently urban design has become once more a concern in replanning older cities or in the design for new communities. Yet too often the lasting cultural values of quality and beauty of the environment are abandoned in favor of temporary economic concerns.

Housing throughout history has been the largest single function of the city; indeed, from a social and quantitative point of view it dominates the scene.

In the past the aristocracy and the richest people always lived closest to the city centers and in the middle of the cities' life. From antiquity to Renaissance Florence and to the eighteenth-century Central European baroque towns, the aristocracy and the most important families lived closest to the palace and the center of the town. Therefore most European cities still proudly show beautiful old palaces and town houses in the inner city's streets. Now, just the opposite is true, especially in the United States where the affluent and most middle-class families move to the suburbs or out of the city. Only the poor and a small minority of the very rich or people without children remain in the center of town.

Industrialization and modern transportation have completely altered all housing patterns. The nineteenth century industrial city's housing was built entirely to satisfy economic demands: The relentless pressure to produce more and faster, to make more profits in a hurry, required many more people and workers in towns where the factories were built. The housing built for workers was without plan or organization and without any regard for the real needs of people. As Mumford says: ". . . The growing urban population lacked the most elementary facilities for urban living, even sunlight and fresh air, to say nothing of the means of a more vivid social life."

Nothing was planned to last or built to satisfy the most basic human needs. The concept of the city as a community for people to live the good life was totally forgotten. The housing and the cities that were created piecemeal produced profit for the factory owners but did very little else, least of all for the workers and their families.

The garden city movement was started in England in response to the utterly degrading squalor of the industrial cities' housing, which often seriously threatened life. Ebenezer Howard's book *Garden Cities of Tomorrow,* published in 1898, has had a lasting effect also in the United States. Several garden cities were built in England and in this country. While the idea contributed to creating better housing conditions, the actual towns built did not succeed in attracting enough industry and mainly became satellite towns with many of their residents commuting.

By now in the United States much of the industry for which the industrial city's housing was built is no longer dependent on urban concentration or on the railroads that were needed to bring supplies and move the finished goods. Trucks and automobiles have supplanted railroads for transportation, and industry is moving out of cities because it is more profitable to locate on a highway outside.

The central cities are left with much poorly planned land, developed in a haphazard way, and with obsolete housing. Above all, central cities are left with fewer jobs and with the poorest people who could not follow when industry moved. In addition there are the unskilled rural newcomers, mainly Negroes, and minority groups who are not used to urban life; the city has to provide more and more services of every kind for more jobless people in the face of dwindling revenues and deteriorating housing. By now most of the tax-paying middle class has moved to better housing in the suburbs. As a result of the move to the suburbs of tax-producing industry and middle-class people and the increasing costs of administration, education, welfare and all services the financial situation of almost every city is strained to the breaking point, despite public housing and a multitude of federal programs designed to help cities help themselves.

Housing patterns today in every U. S. city most of all reflect racial and economic discrimination between people and separation of functions such as residential, industrial, and recreational. The planless, hastily developed housing for quick profit is blighted and obsolete and often has deteriorated into hopeless slums. Because these blighted areas are so large, the poor—frequently racial minorities—who must live in them for lack of any other accommodations are separated and isolated from the rest of the city into a segregated, desperate world of their own. In turn, suburban housing patterns, which have developed over the last thirty years farther and farther away from the city centers, produce areas of sameness and of another kind of social and visual segregation from the diversity of urban life. In our present urban and suburban segregated housing patterns, we have largely lost the purpose and vitality of the city as a constructive community of social exchange.

Now in many ways the whole metropolitan area has become our city; it functions as a whole economic and cultural unit, despite all the obsolete political boundaries. In part these boundaries contribute to the segregated housing patterns and to the segregated schools. It will take a long, drawn-out struggle to legalize the concept of the metropolitan city; nevertheless it is in many ways a functioning fact. Transportation and communication, building technology and new sources of energy have created our metropolitan constellations, though we have yet to define this development rationally.

Lately a new awareness and a change in attitude have occurred concerning the development of urban land; the battle to make existing cities into fit places for people to live in at last has begun. We must make sure that this battle is won. New cities must be built for different kinds of people, with different jobs, different incomes, and a diversity of views of life. This will create once more a vital, lively city because variety is both a necessity and the spice of life.

To make this happen, we must have more active participation by people who really care about cities, about urban culture and city life. But it can only be achieved if more people understand what the city is now, its history, and what it must become.

In a time when we must seriously concern ourselves with the building of new towns and cities as well as improving and rebuilding existing ones, more of us should also concern ourselves with the quality of what is being built. We should devote more effort to achieving better human and visual values in our man-made urban surroundings because our environment does affect our way of life. From an economic point of view, we can afford it; what we cannot afford is the waste of people.

We all need access to natural beauty, to green trees, clear water, and unpolluted air. We all need healthful, clean, and orderly cities which not only fulfill the functional demands but permit us to live with human and cultural values; and one of these values is beauty in our lives.

Rather than producing only more, we should improve what we make and build and preserve the good things and proven ideas that we already have. The achievement of quality and excellence is a process that involves all the people and certainly includes our physical environment.

Cities are made by people, and the man-made environment marks man. Cities reflect man's joint aspirations, his manipulation of his natural surroundings for communal goals. That the man-made environment cannot be successful if it is built for the wrong reasons—for profit for a few rather than as a prospering community for the many who live there—is evident if we look around us here and now.

To learn the visual language of cities will not only immensely enrich and contribute to our lives, but it will give us a sound basis for judging the success of our urban environment. It seems strange that in our world of diversity of pursuits and plurality of undertakings so little attention has been paid to learning to see and understand our man-made world.

The language of cities is the key to both past and future. The environment is the most complete tool for understanding life and living if we know how to read the story of human nature which it so eloquently tells. Cities are the physical record of curiosity and imagination, of inventiveness and aspiration, of competition and cooperation, and the joint achievements of the history of man. By learning the language of cities we shall also learn to shape their future in the image of real human needs and the continuing values of life.

The visual language of cities

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The Joy of Seeing

What are cities to you and me? What do they teach us? The physical environment of the city is the visual expression of its functions and life. The interaction between the visual environment and the quality of life in the city ultimately expresses the city's failure or success.

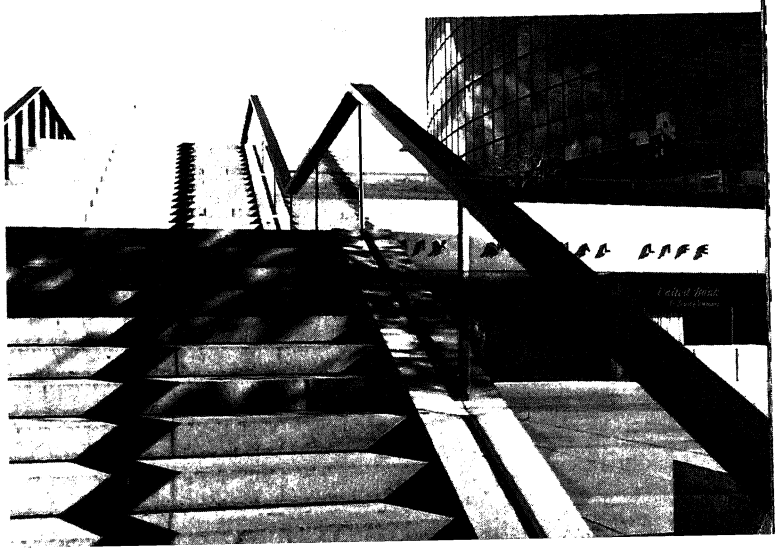
Through perception the environment becomes communication; yet communication has shaped and changed our life and the environment, that is, the city. What we perceive is more than just seeing; the physical environment becomes more than a setting; we make it into an extension of our own actions and life. In this way it also becomes education—it tells its story to those who can see.

The debate about the human qualities of our environment fills the pages of every daily paper and countless magazines and books. But the debate concerned with the visual qualities has barely started and is inhibited by a lack of vocabulary and by a lack of understanding of what the visual qualities are. It is difficult to arrive at any conclusions if you can't define what you are talking about. It is even harder to make any value judgments if you lack the language and the means to arrive at opinions and if you have never learned how to see.

True perception has to be learned through constant practice; however, curiosity is its most important part. Like good taste, perception is something to be acquired slowly; then it becomes an active part of our lives. It will change not only our way of seeing, but also our entire view of the world.

Perceiving the urban environment and life, that is, the city, is like looking at a play. As the beholder you get drawn into the action; the scene becomes part and parcel of your own experience. As the play and reality mingle, so do the scene and the city's life. As viewer you become drawn into the action, while actors stand aside and become observers of reality. Even as spectator or bystander, you can't avoid a part in the total play of city life.

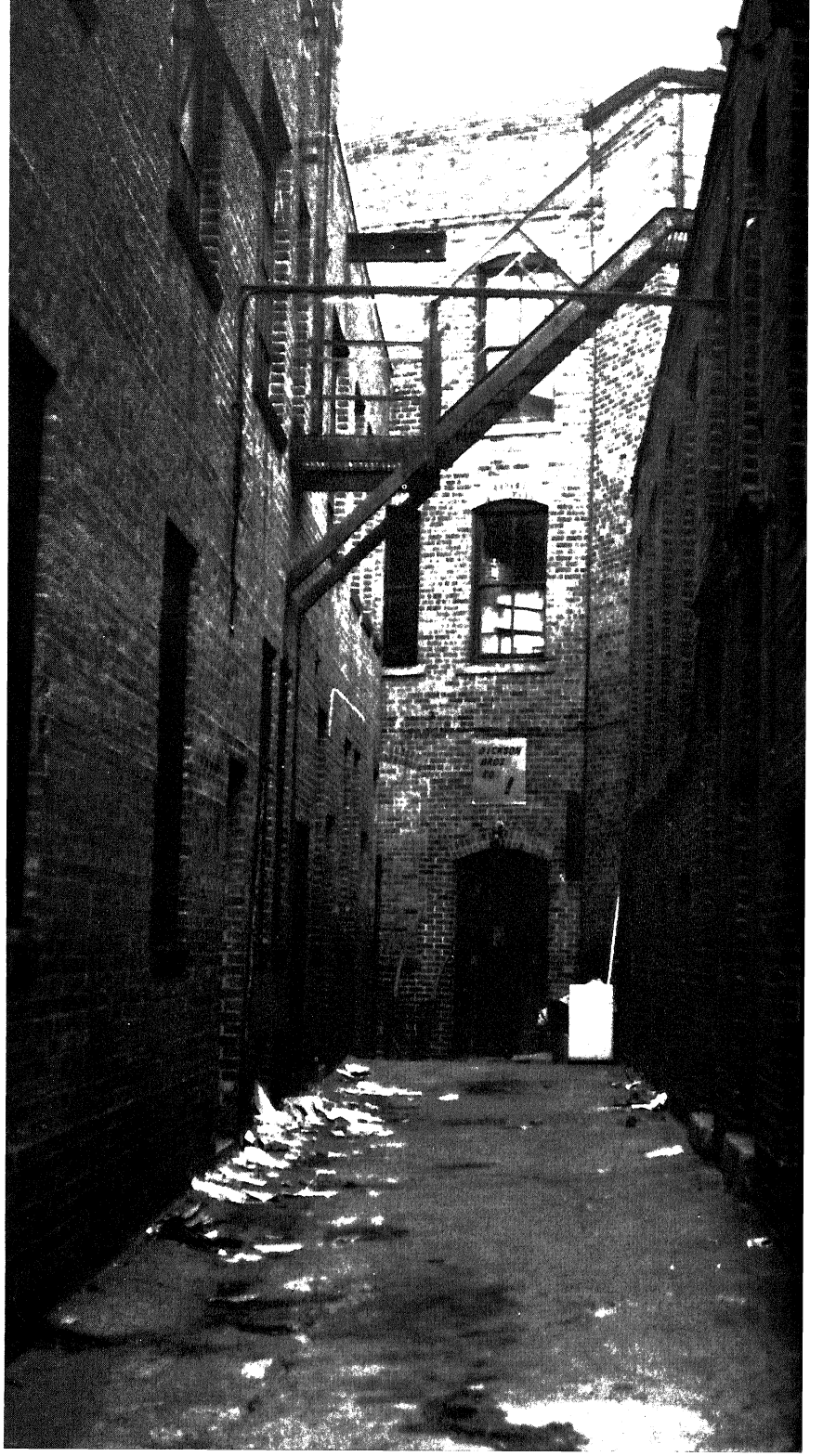
The joy of seeing is an acquired pleasure. Like most good things in life it needs some work. Perception requires education in seeing; like most other values it can be taught and learned. Too many of us don't know the joy of seeing because we assume—since we are born with eyes—that we can see. But there is much to learn about seeing before we really perceive and understand our environment.

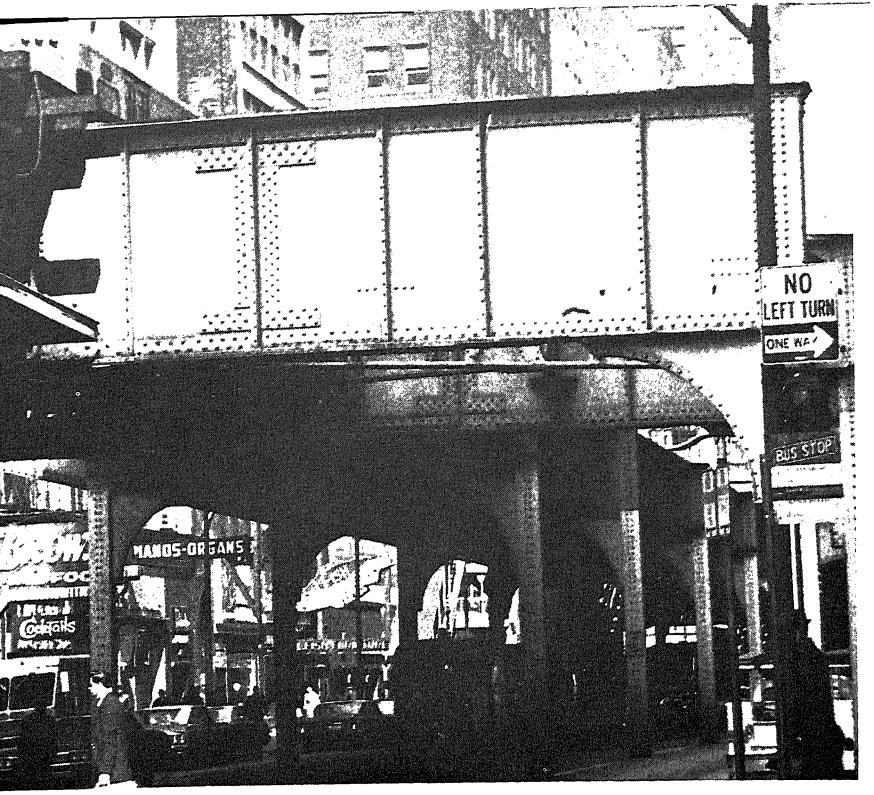


We are born with ears, and we don't think it strange to learn about music. Many people spend long hours learning how to appreciate what they hear. We learn to read very early, and much of our life is spent with what is written, the printed word and books. But most of us are never much concerned about the language of seeing, about how to "read" our man-made environment, buildings, architecture, and cities, and how to learn to appraise what we see. We learn the symbols of numbers and their relationships to one another, but we don't learn about space and scale and their relationship to us. We take for granted that we have eyes and therefore see, but in truth most of us don't perceive anything at all.

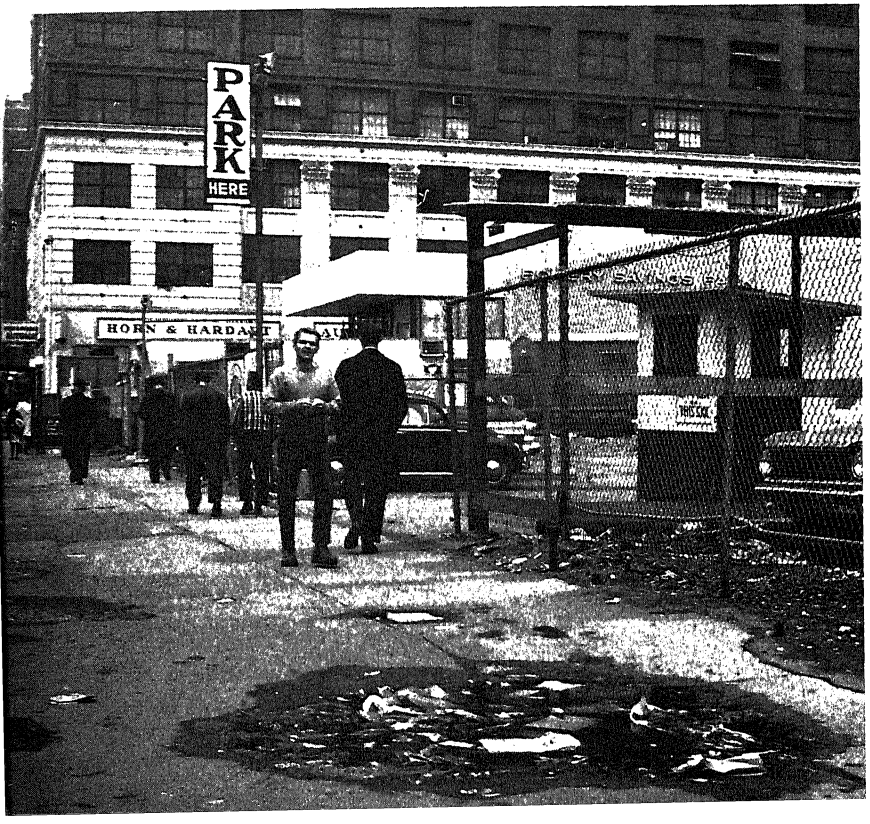
It we are really observant, we see that much of today's city is desolate; it has become so not only because we made it that way, but we allowed it to happen—because too many of us are unperceptive and blind. Aside from missing much joy and fun (seeing is one very real pleasure that costs nothing at all), there are other very serious results from not seeing. We are not only blind to beauty, to that which enhances our life, but we are also blind to the desperate situation of much of our urban environment and its effect on people: the ugliness, the hopelessness created by living in a world of squalor and neglect. The disorganization of much of our urban life is wasteful; its degradation produces blight in buildings and despair in the lives of people. Squalor is an expression of not caring, of disease. We want to be blind; we don't want to see the results of our failures and our neglect.

Neglect breeds danger for the whole community, not only for the people who live in this desperate environment; the guilt of not caring, of not wanting to see, implicates everyone. We have the tools, in modern technology, to create a better environment for people and we have the economic means to alter the life of the poor. Both go together if we are perceptive, but first we have to learn to see both the environment and the truth.





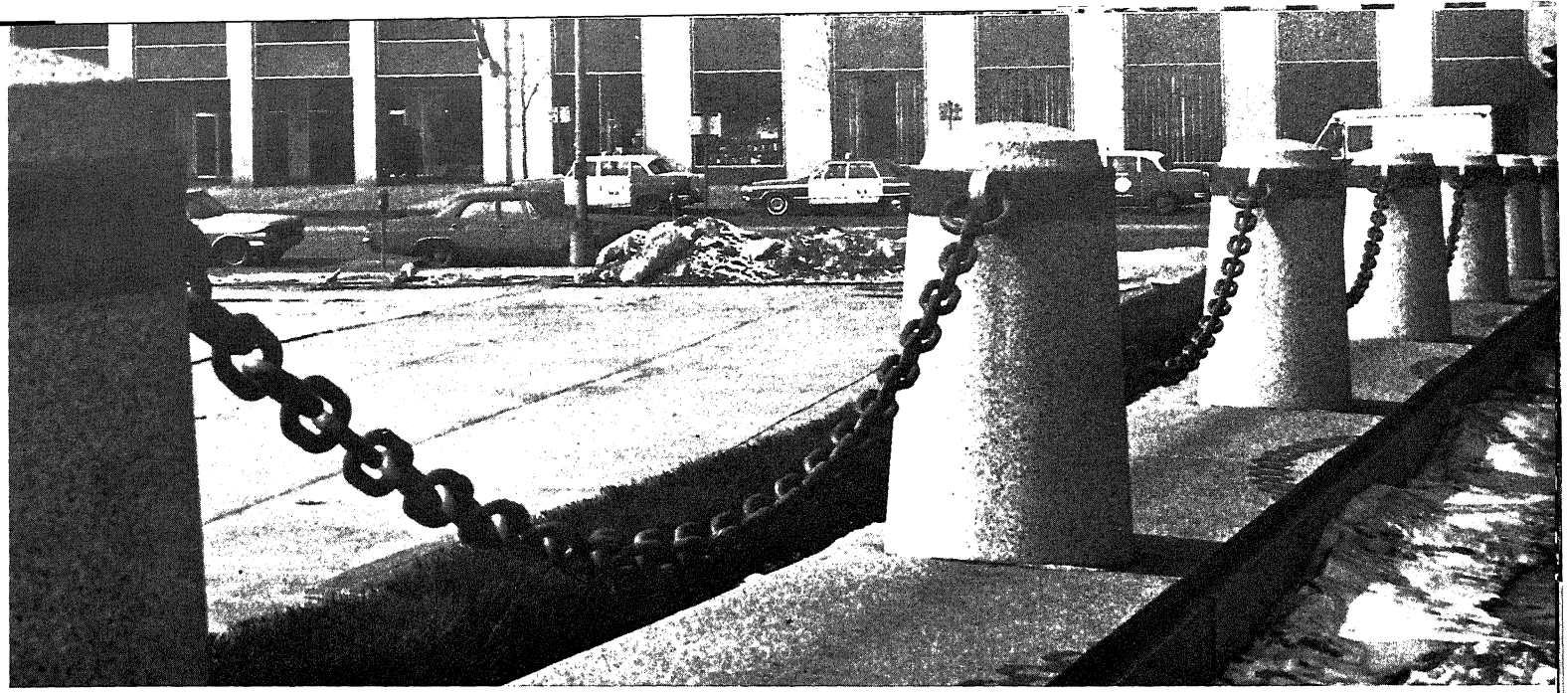
For lack of caring . . .



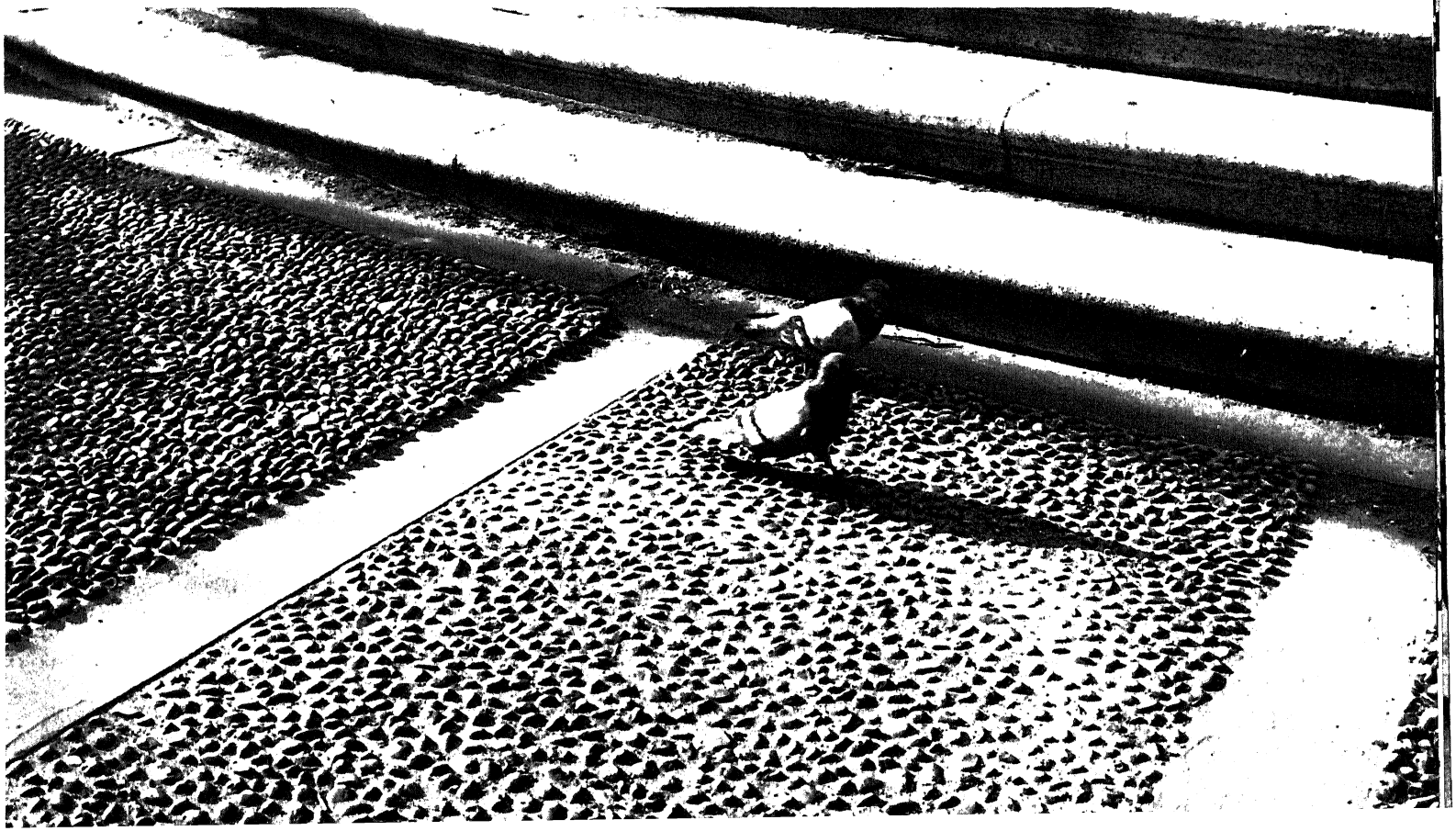
Here we shall explain some of the facts about seeing; we shall provide the tools for perception and the language to discuss the visual world. This book can tell you some facts about seeing, but it cannot do the seeing for you. It can describe perception, the way to watch and how to observe; it can direct your attention and give you some understanding of what you see and why. But in the end, you have to go out and see for yourself; because seeing is a most personal experience and is influenced by all that you have learned and seen throughout your life. You have to try and look on your own for what we here put into words; but what you yourself perceive may be very different again because it is influenced by your own past.

You will soon discover that there is a new world which somehow before was hidden or that you had never noticed before. Most of all there is the world of color and texture: Color speaks a language of its own; color can be immensely gay and cheerful; it also has the power to change the environment completely, and it can change your own mood. There is the magic of light and shadow that constantly redefines our urban surroundings and alters the contours of what we see. There is the changing space around buildings, the rhythm and movement of form in space. Sunlight moves and creates ever new designs and patterns; fog and haze spread over the hard forms of buildings and make their outlines fuzzy like soft wool. And there are countless beautiful details waiting to be observed and enjoyed by you.

How can you train a receptive eye and mind? How can we put into words what you should look for? There are the dancing sunbeams in a puddle of water, the strange shapes of crumpled leaves on a brick walk, the brilliant moving headlight reflections in the wet pavement on a damp and rainy night. There is the rhythm of windows set into the varying textures of building materials. There are the waving reflections in the wide space of an open body of water. There is the gaiety of fountains playing with the sparkle of water and the exciting flashing colors of advertising signs. These are but some of the moments of beauty of our everyday environment. Unfortunately they escape us too often because we have never taken time to learn to really see.



Details . . .

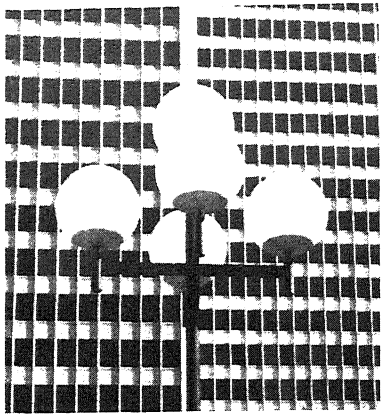


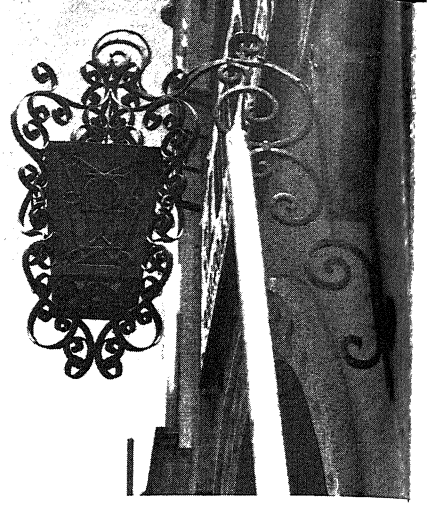
One way to learn to see is through the eye of a camera. Even if you do not take photographs at first, you learn to observe and look for a picture. Then if you start in earnest, take color slides. Take what you think is most characteristic of a street that you know, or what is most interesting to you. Try and write down from memory your experience and what is in the pictures you took. Then compare the pictures with what you wrote. You will be amazed how much you have forgotten or probably never noticed at all.

You can train yourself to observe details. Again, a camera is a great help. Take, for instance, a series of close up pictures of the texture of street pavements; the results will be fascinating to look at. Or make a street lamp collection or photograph some interesting window designs. Take pictures of the same street or area at different times of the day and at night; watch how the light changes. Soon you will see much more of what surrounds you, things that you never looked at before. What you see will take on a new meaning; you will begin to develop a designer's eye. The streets will have many new qualities that you never noticed because in truth you never really looked. You also will discover that there is much to see if you look up and at the buildings instead of only down on the sidewalk, at other people, or into the windows of stores.

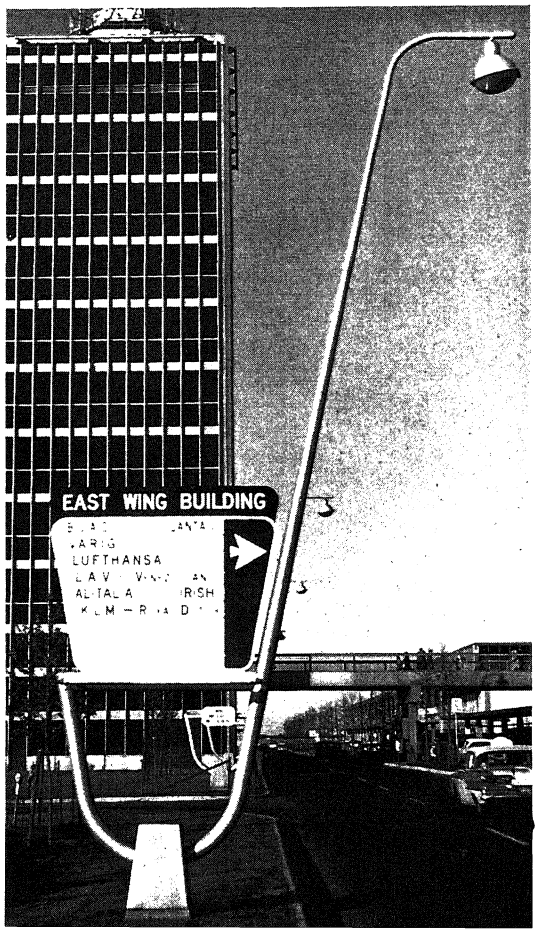
Order and rhythm are not only pleasing, but they are part of the urban, man-made environment as much as part of your personal life. You will find that it is satisfying to have scale and proportion around you. You will learn to discover on your own, by carefully looking, what you like and why. You will be able to make rational judgments as to what "fits" into a street, a square, a cityscape, or a building, as well as what fits into your own home and what fits you. You will develop a new set of values that soon will influence your whole view of life.

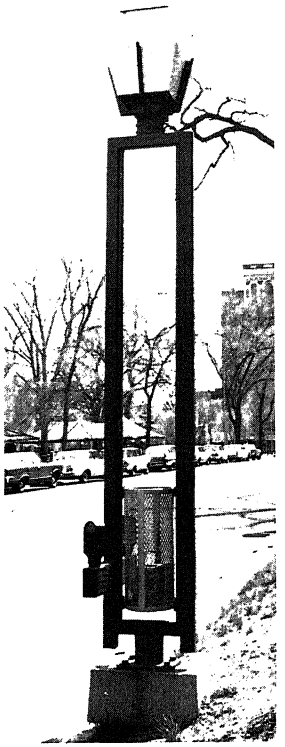
What we don't see is lost to us forever. If you take a good look at your surroundings, you will discover many unexpected pleasures that somehow before you blindly walked by. Most of all, you will discover the joy of seeing because there is much beauty in our urban everyday world.

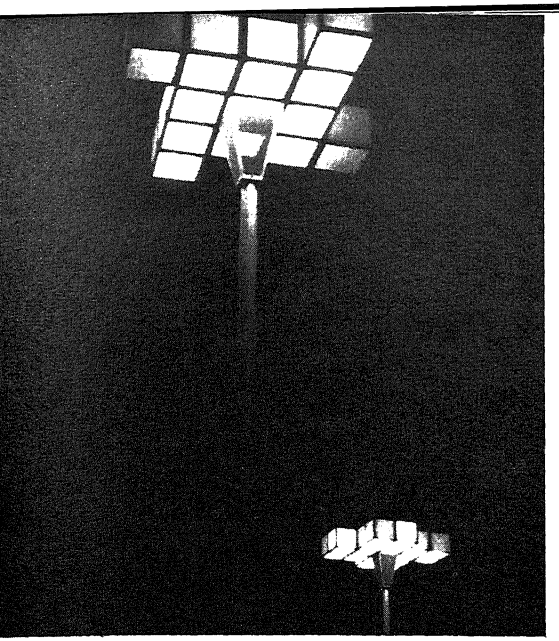


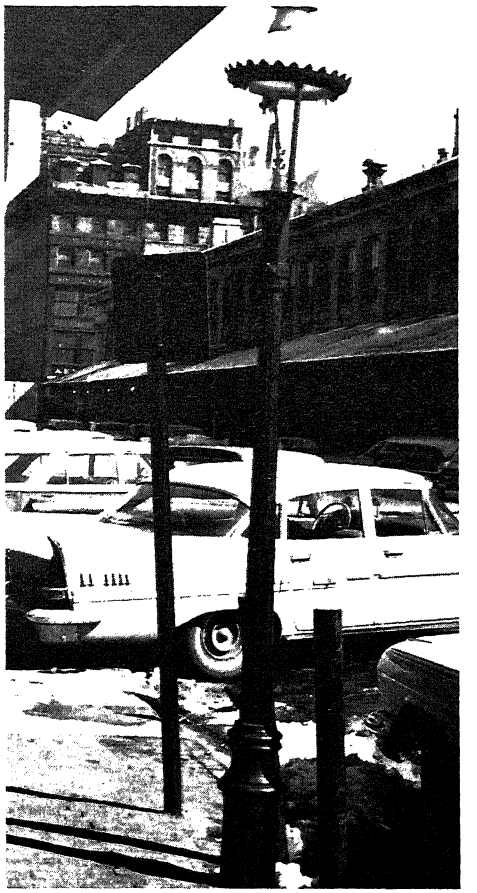


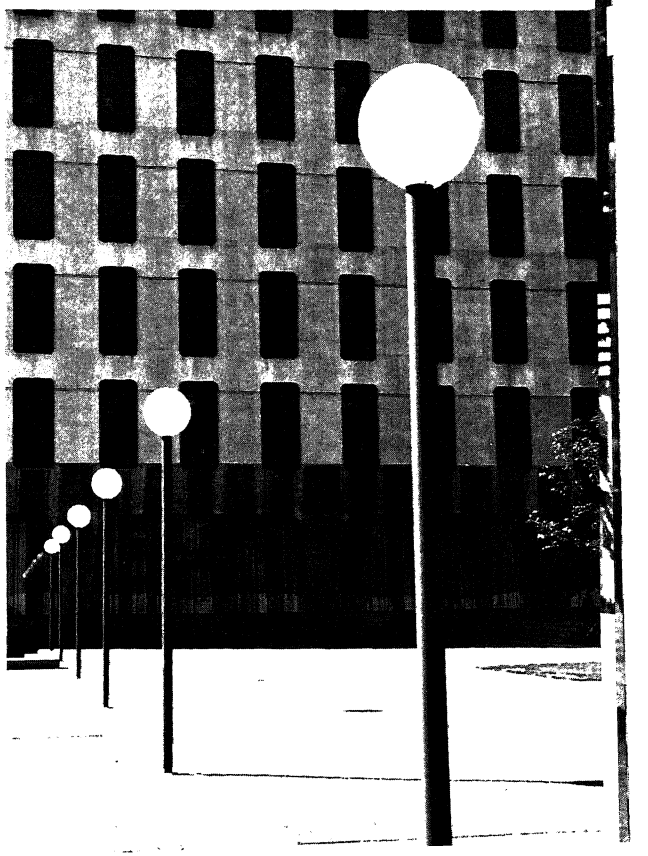
A street-lamp collection











The Visual World

We are surrounded by visual communications, and we establish our relationship to our environment first of all visually. Our eyes give us the information we need to help us to orient ourselves within our surroundings. But our eyes also evaluate this information and warn us, based on past experience, of any danger they see.

In the city we are surrounded by visual information everywhere. In turn, the urban environment is often transformed by the innumerable signs and visual symbols which have become part and parcel of our urban world; visual messages, omnipresent in every form, shape, size, and color, try to intrude in our lives and influence our decisions. The economic creed of our society is relentlessly paraded in the ubiquitous advertisements that follow or even anticipate urban development everywhere.

Visual information and visual symbolism follow us through history and life: from hieroglyphics and picture language to punched cards, skywriting, and microfilm, from heraldry to traffic lights, from altar paintings to op art, from smoke signals to television, it is the visual message which has shaped much of our world. Yet this message has a special meaning for each of us based on our own associations and past experience.

Our immediate surroundings, our homes and buildings, the streets, towns and cities, are visual expressions of our way of life. The whole man-made environment carries the visual message of our society and our values; the language of cities is shaped by our beliefs and what we hold dear. Yet everyone has different reactions, and most people see things in very different ways.

We can learn to sharpen our visual perception; this will transform not only how we see the world and its people, but it will also influence our values and our life. It will give us a new understanding of the realities of our environment and give us much enjoyment, but it will also show us the utter poverty, wretchedness, and squalor of much of our urban world. The visual environment in this sense becomes a means of education and one that has been very much neglected so far. The city speaks its own language, which visually expresses its purposes and its functions. In turn, as a means of communication, perception creates a whole new environment of its own.

In this book we shall first discuss how our eyes function, the physical equipment with which we see—how we react to what our eyes tell us and how different reality often is from what we think we have seen—that is, the physiological influences. But psychological reactions are never far away. Optical illusions often can fool us; space and color make us react in different ways.

Without light we see nothing. Light and shadow define the visual world, what we see and how we discern it. Light changes colors, and colors in turn quite alter the light, and with it our visual environment changes.

Scale is the relationship between ourselves and our surroundings. It also describes how different parts of the environment relate, such as the buildings in a square or the furnishings in a room.

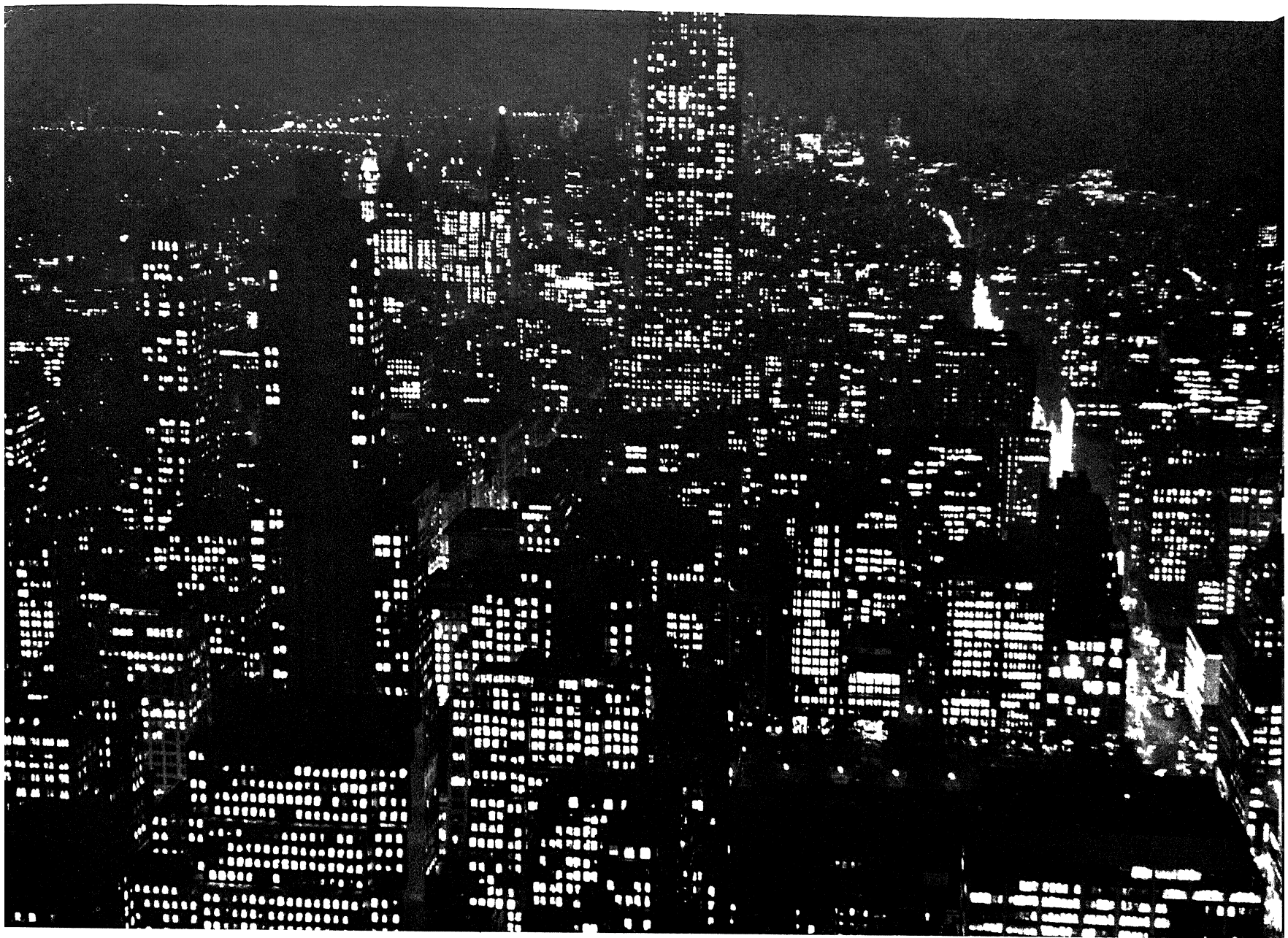
Space is a negative volume and defines form. In a city it is the open area between buildings, but it is also the hollow inside a building; the interior space really gives a building its form. Both space and scale unconsciously influence our feeling of well-being or how we react to the surrounding world.

Color and texture are the surface qualities of materials. But texture also establishes scale and helps to define form. Color often changes the whole picture; it can also create a stimulating or depressing mood.

Form refers to the physical shape of our environment. In turn, it is influenced by how we see and by our relationship to the surroundings, that is, by both our physical and mental point of view.

Movement is concerned with mobility from one place to another; in the urban context it means the traffic of people and goods, which is the very life blood of cities. The physical arrangements for movement—especially highways today—completely dominate new urban development of every kind and are fundamentally changing all existing cities, especially those that are old.

What we see of a city is very different if we stroll on a sidewalk or ride in a car at more than 40 miles per hour. Both the sequence of what we see and the speed with which we move greatly influence our view. From where do we first see a building or a space? Do we look from the ground or from a plane? Our point of view, where we stand in relation to what we see materially changes what we perceive.



In real life all these qualities or criteria which we have carefully isolated here are not separated at all. They all work and play together, they influence each other, and they all contribute to the view of the whole; though sometimes one or the other dominates the scene. You can devise your own system of visual norms or measures. We claim no uniqueness or special merit for the one outlined here. Except that it is easy and convenient for what seems to be a rather difficult task: **to translate the visual language of perception into the literal language of words.**

While we are concerned here with the man-made world, it is important to always remember: This is the stage for the action, the shell that holds the life. And life is people.

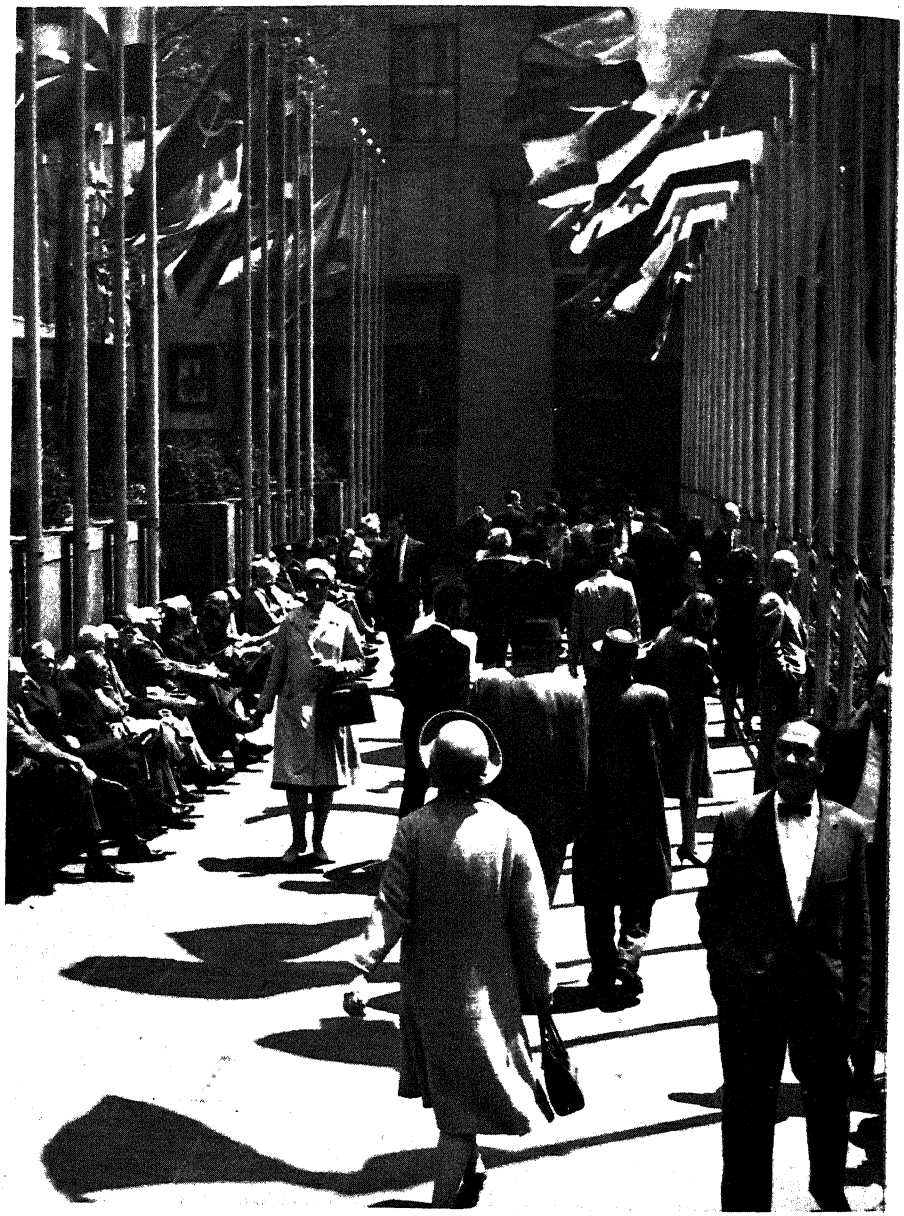
The proof of the success of the urban world is in its use: A city well used is the happy sight of people enjoying themselves. The successful city, aside from fulfilling its functions, must enhance life and love, the joy of seeing and sharing; it must fulfill man's basic needs for community and communication, but also his aspirations for a better life. It must provide an incentive towards the achievement of cultural values and education, but above all it must create a harmonious and beautiful environment.

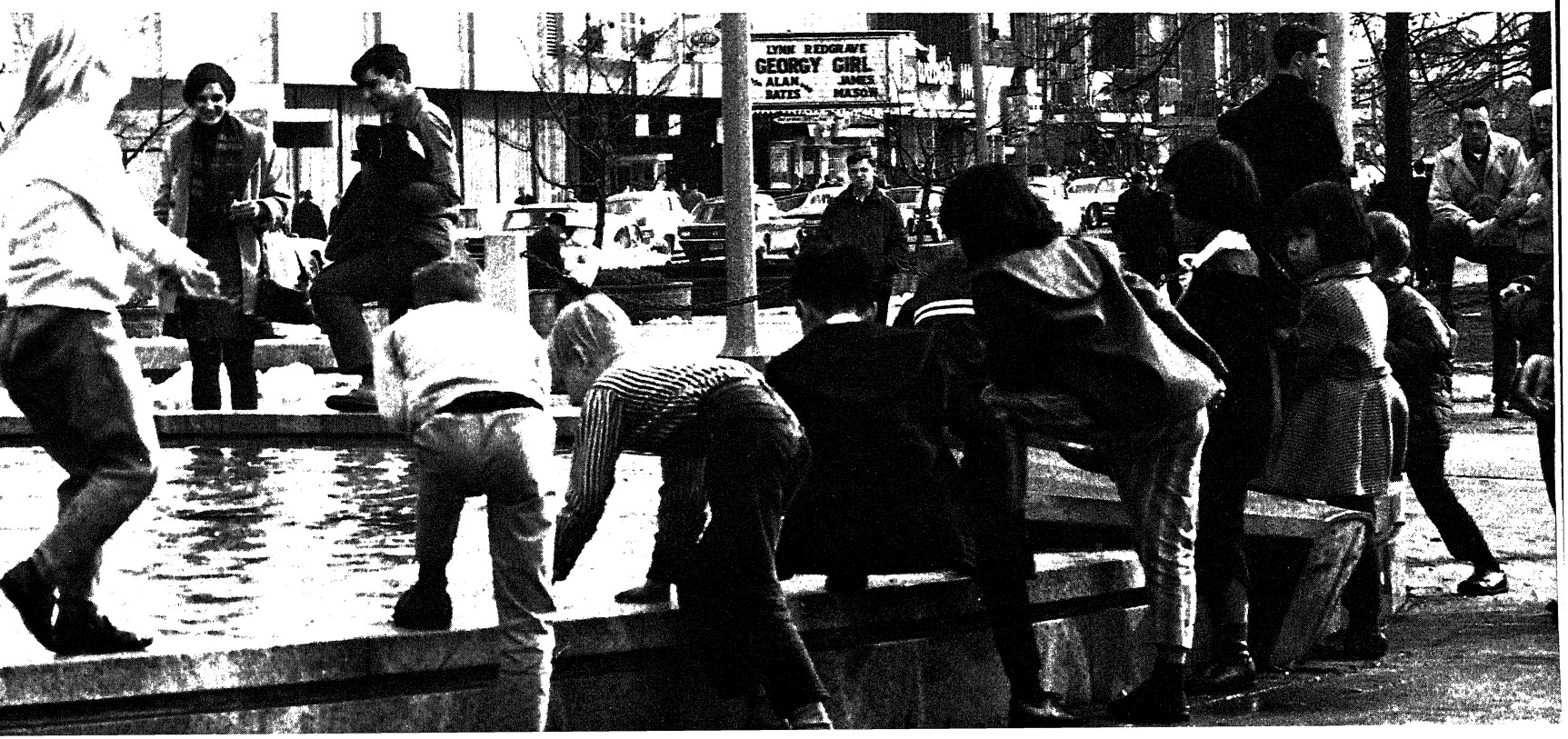
Does the city provide what people need: mobility and variety, dignity and diversity, jobs as well as fun? If the city successfully fulfills its economic as well as human functions, then visual delight becomes part and parcel of the whole.

The visual success of the environment also depends on its use by people. People make an immensely cheerful, ever changing picture in the man-made urban world: the colorful clothes of men, women, and children moving through the streets; the happy crowd coming out to see and to be seen; the whole gay shopping parade. Add to this all that constantly moves through the city streets: cars of every kind and color, trucks and buses in every shape and size, bicycles and motorcycles, trains and trolleys—they are all part of the urban visual world.

The city is all things to all men: it also is an immensely powerful image of man's future hopes and dreams. The language of cities is the physical expression of its life and its people. The urban environment must provide for the people, but in the end the people make it a failure or a success: because it is the people who make the visual image into the real living urban world.

The proof of success is in the city's use




LYNN REDGRAVE
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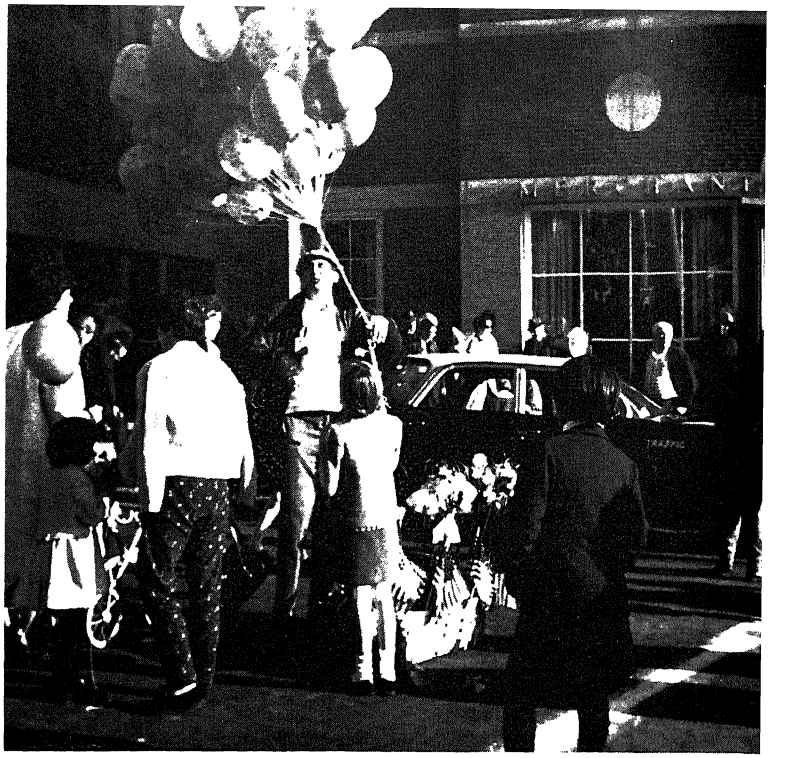
ALAN BATES
JAMES MASON



The life of the city is the people


GREELEY SIGN SYSTEM
OUTDOOR SIGNS · SHOW CARDS
WINDOW LETTERING · DISPLAYS
SIGNS
McANN'S
BAR


GREELEY SIGN SYSTEM
OUTDOOR SIGNS · SHOW CARDS
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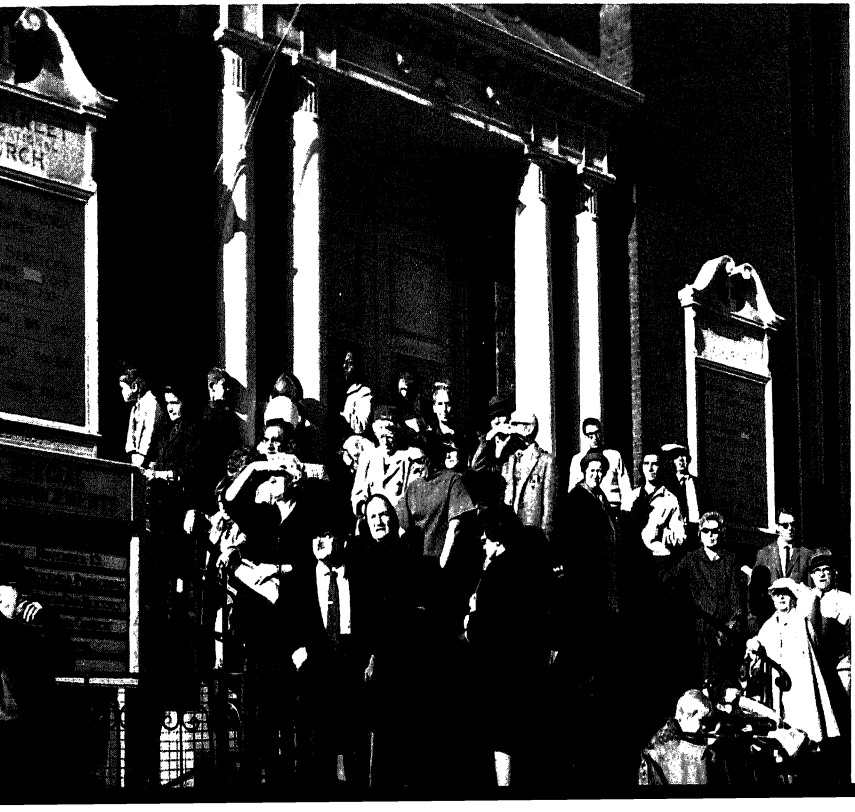
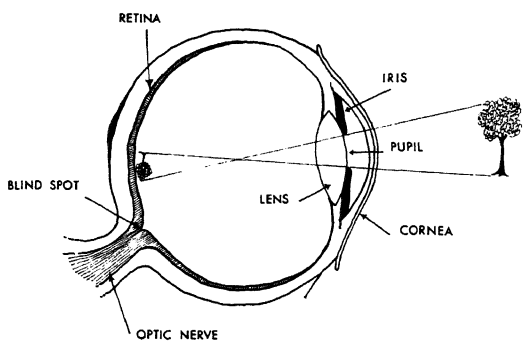


HOW WE SEE

How do our eyes function? To begin with, we need light: without light we see nothing. What we see is light, light reflected from an object and the source of this light. Light comes into our eyes, is focused by the lens, and hits the retina. There it sets up nerve impulses which travel over the optic nerve to the brain. The eye changes light to impulses that start a whole set of chain reactions.

The eye is a marvelous machine with a self-adjusting lens and focusing device, a shutter, and an elaborate protective mechanism. A camera has many similarities to it. Both the eye and a camera use a lens to focus an inverted image on a light-sensitive surface. Both possess an iris to adjust to various light intensities. But a camera focuses by moving the lens closer or away from the object while the eye focuses by changing the thickness of the lens.



The act of seeing begins in the retina, which is a soft, transparent membrane that covers the inner back part of the eyeball. The retina has several layers; one of these has the "rods" and "cones." These rod-shaped and cone-shaped cells (about 115 million rods and about 6 million cones) are the light receptors which are in turn connected to optic nerve fibers. The rods provide dim-light vision at very low levels of light, and their capacity for image vision is relatively coarse. The cones are smaller than the rods and are keener; that is, they detect fine lines and are used for detailed vision (for example, reading words). The cones function only in bright light. The whole process of color vision is currently under renewed scientific investigation.

The fovea is a spot on the retina directly opposite the lens which has a concentration of cones. With this tiny patch (smaller than the head of a pin), the eye accomplishes its most detailed vision.

The optic nerve delivers the message picked up by the rods and cones to the visual center in the brain. Here sensation becomes perception.

The brain must learn to correctly analyze the impulses received from the eyes. The impulses received from the upper part of the retina are really the lower part of the object. In turn, the brain controls the voluntary muscular functions of the eye. The brain also connects our past experience and associations with what we see, and thus our impressions and reactions are formed. From this point on, psychological influences are imposed on the physiological facts.

Our eyes are about 2½ inches apart from pupil to pupil, and the two views are not exactly alike (stereoscopic effect). The brain correlates these views, and in that way we learn to judge distance and perceive depth.

We look at things in a series of short jerks—an image that has registered continues on from 1/50 to 1/25 of a second. Movies take advantage of this; we do not see the short break between each separate picture but combine the pictures into continuous motion.

There are many ways to correct imperfect eyesight, but even perfect eyes get tired and play us tricks. If you stare hard enough at a window and then shut your eyes, you will see the opposite—light and dark—image. The same is true with colors; if you look at one color combination intently, your eyes will produce an afterimage of the complementary or opposite color scheme.

Our eyes fool us in many ways, and artists have used their knowledge of how we see to create special effects and illusions.

A long, straight, and horizontal line appears to cave in at the center because of the curvature of the retina. To counteract this optical illusion, the base of the Parthenon (this building so much admired for its perfection) was raised four inches higher in the center. The long lines of the steps seen sideways appear straight.

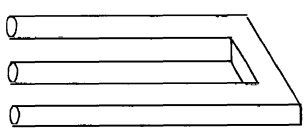
Vertical stripes are assumed to have a narrowing or slimming effect, but just the opposite is true. Horizontal stripes dissolve the massiveness of a building (depending, of course, on their width). To confirm this, look at the drawing. Architects have long understood the use of optical illusion. For instance, the horizontal stripes diminish the size of the columns in the cathedrals of Siena and Pisa. Surface designs and stripes can also change the apparent dimensions of a building, outside as well as inside.

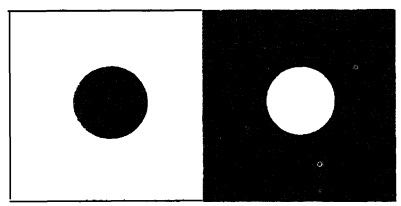
Strong patterns and colors can cover up architectural features or enhance them, depending on how they are used. Over-all patterns conceal architectural (three-dimensional) features and so do dark colors, especially dark gray. By using bright contrasting colors, architectural details can be sharpened and made to stand out.

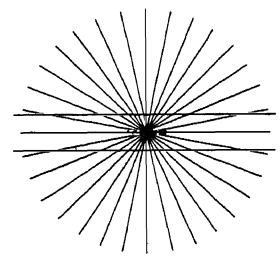
Movie photography uses all kinds of optical illusions: we are tricked by the camera's eye. Miniature city models appear to be full scale (in the absence of people), and "real" sea battles take place in indoor tanks. Miniature cameras can take pictures of architectural city models at eye level to produce the illusion of walking through real cities. To the camera, a painted backdrop has real distance. If we lack a life-size object for comparison, a scale model is taken for the real thing.

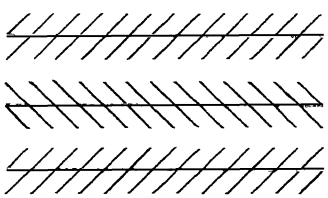
Light spills out over the edges of an object; for instance, a white shape on a black background looks larger than the opposite. We see the same object concave or convex depending on our point of view or on the shading. That is, a three-dimensional image can be arbitrarily created or actual objects can be flattened out. In the urban environment light has much the same effect: it can flatten or enhance the architecture.

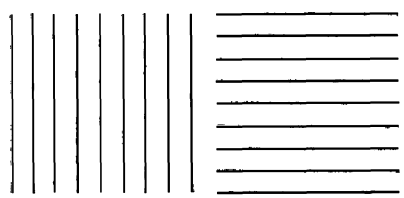
In an open space, such as a city square, we see clearly

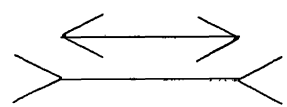












only a certain area without moving our head. This field of vision is cone-shaped about 27° high and about 45° wide. The height and width depend also on the size and color of the object that we are observing and on the light. Beyond this field of vision we don't see sharply, though we know something is there. To see a building completely, we should be about twice as far away from the building as its height. To observe details, we must go closer. Our point of view and the way we move through an area greatly influence our understanding of an urban space.

The perception of distance can be increased by artificial perspective: this is often used in stage sets and also by architects. The Royal Staircase in the Vatican by Bernini, the great baroque architect, creates a vision of great distance by artificial perspective. The staircase gradually narrows down towards the far end. This was done to make the appearance of the Pope more impressive. Baroque architects, especially in their interiors, were masters of visual illusion and of creating space.

We see best what is at eye level, and many never lift their heads beyond the shop windows or the other people in the street. Most people are far more conscious of what is on the ground than what is above—because we must look down so we don't stumble. In fact, the lower part of our eyes is more sensitive; we must raise our heads to see what is above. Therefore the texture of the paving of the street or the color of a rug influence the total view far more than the sky or ceiling.

Normal conversation distance is about 8 feet or less; beyond 10 feet we have to raise our voices. Facial expressions can't be distinguished beyond 40 feet, and to recognize someone beyond the distance of about 75 feet is difficult. The maximum distance from which gestures can be discerned or a figure identified as a man or woman is 400–500 feet; beyond that, identification is difficult. The Place Vendôme in Paris is 410 feet in diameter, and St. Peter's Square in Rome is 400 feet wide. Both squares are impressive, large spaces, but they are not too large to be clearly seen.

Streets also look very different from one direction than from another, and this often causes us to lose our way. We instinctively look for familiar signposts and for prominent buildings for orientation in an urban area, especially if it is new to us. To find our way, we need visual directions; we use towers or highly visible tall buildings to determine where we are.

We use visual information selectively, especially in the urban scene. Therefore we should be aware of how we see, how our eyes function, because this influences what we perceive.

Mastery of space illusion

Canaletto: Vienna from Belvedere, 1758

WHAT WE SEE

Order and Unity

Order is one of the basic human needs. There is an established social order in every civilization. Law and order govern our institutions. We need order in our personal lives, in the conduct of our affairs, and we also need order in our environment. The rhythm of day and night establishes the basic order of life, the seasons the order of nature. Weeks, months, and years provide the orderly framework of time.

In the man-made physical world, order and unity are really one. They refer to the basic organization of our environment, that is, the system by which it is arranged. There must be certain priorities in this system which determine what comes first or what is more important in terms of use, location, and visibility. There is a visual hierarchy that follows the social one.

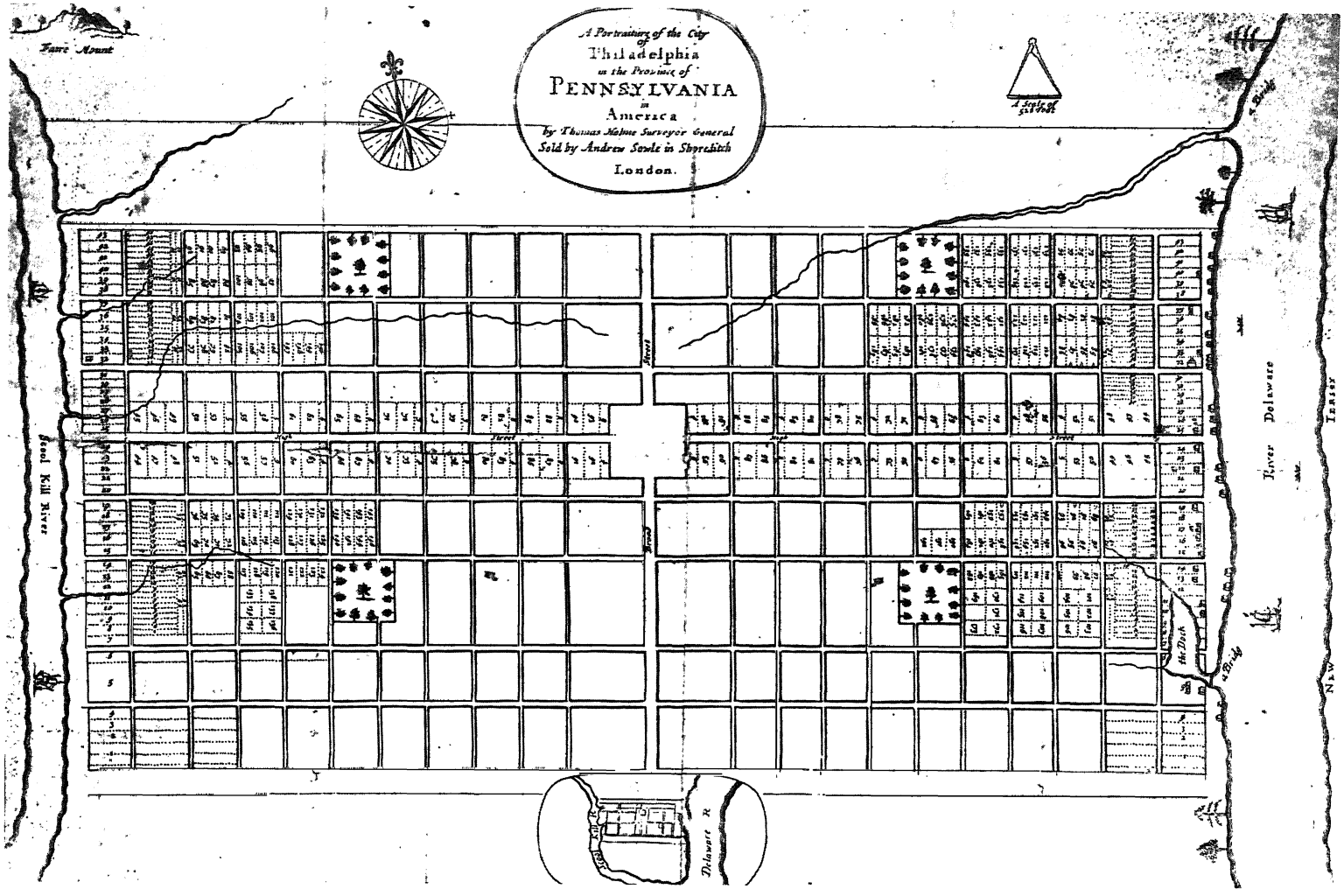
Harmony and balance, rhythm and symmetry, size and height are the visual criteria which define order.

The urban environment must be arranged according to some organized pattern of order. Today usually transportation has priority and determines to a large degree the shape of our environment: roads and street patterns establish the physical order of urban development.

New expressways frequently establish their own order outside (above or below) the city. At high speed, a driver is in a separate world dependent on road signs for orientation because the expressway network was built long after the city.

Subways seldom follow street patterns or the original layout of the city and often function at cross-purposes with the rest of the urban design. In the future transportation must be an integrated part of the environment. In new cities transportation becomes a governing factor of the whole design.

Some older cities and towns were laid out according to a strict visual order or pattern; they were planned and designed according to a preconceived form. Washington and Philadelphia are the two best-known examples in the United States. In Europe, most towns were planned by their rulers or kings and princes



Thomas Holme's map of city of Philadelphia, 1682

Urban harmony

of the church or aristocracy. Many were originally Roman camps. Many European cities and capitals, such as Paris, Rome, Vienna, Karlsruhe, Amsterdam, and others were built according to preconceived and planned designs.

Only lately have cities been allowed to grow piecemeal. Los Angeles is the typical "grown" city without any organization or plan. But old planned cities have lately burst out beyond their boundaries and are dissolving into formless urban sprawl. (See Form and Movement.) At present decisions pertaining to land development and building are mainly left to the individual enterpreneur who is governed by the need to make a profit. Urban order and unity are not his concerns. Order in the urban envionment must be established on a totally different and broader level and cannot be left to the individual developer's needs or whims. Zoning has tried to establish order in terms of use rather than from a visual point of view. But zoning is a negative instrument of control and has been found to be a limited tool. Our cities are still totally lacking in any positive and constructive ideas about how orderly, pleasing, and well organized development can be guided from an over-all design point of view. Under urban renewal, design control has been successfully established, for instance in Boston. But at the edges of an urban renewal area all control stops.

To understand the order or design of a city, it is best to see it from the air or from a high building in the center. In that way the visual organization of the city plan can be understood. The view from above will also show if unity and harmony have been achieved by the subordination of the parts to the whole.

To create harmony, a pleasing relationship between all the parts must be established whether it is within a building or within a street, square, or a whole city. Size, scale, color, and materials must be related; internal (within a building) as well as external (between several buildings) balance must be achieved. Variety and contrast are means to achieve a different kind of balance without which monotony and sameness deaden all design.

To start with, each building must establish unity within itself by an orderly relationship of window and door openings within the façade.

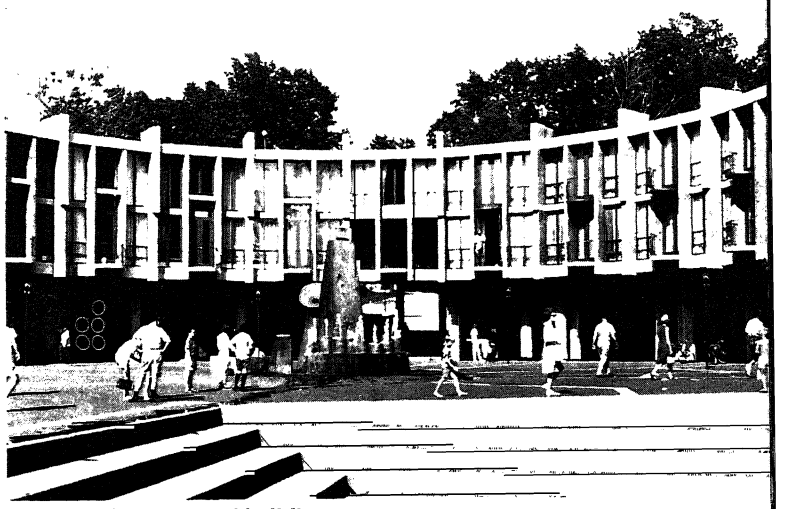
Looking at a street, it is at once apparent if order and unity exist: Are the buildings in the street visually related? Do they have the same height? Are they built to the same scale or of similar materials? Is there harmony in their design?

In turn, are the streets of a neighborhood visually related? This establishes a larger urban order which can easily be understood or read.

Order and unity establish the respect of the part for the whole, the windows and door openings to the building, one building to its neighbor and the street, one street to another and to the squares or intersections, the neighborhood to the town or city, and the city to the metropolitan area or region. Sometimes geography can establish a regional or metropolitan order. But too often urban development has violated the primary order of the features of the land. Still the natural features of climate and location, mountains, rivers, sunshine or snow, are unifying elements that pervade all man-made urban development.

Learning to perceive order and unity is not easy, especially when it is so often missing in our present-day urban environment. In the absence of order or any visible organization, the conflicting purposes and the jarring ugliness of discord spell out visually the disorganization of our cities and our urban lives.

Order within a building



Order within a group of buildings

The larger urban order

Two kinds of order:

The informal order of a simple society

he formal order of a grand master plan

Two kinds of disorder:

The disorder of poverty

The disorder of uncontrolled competition

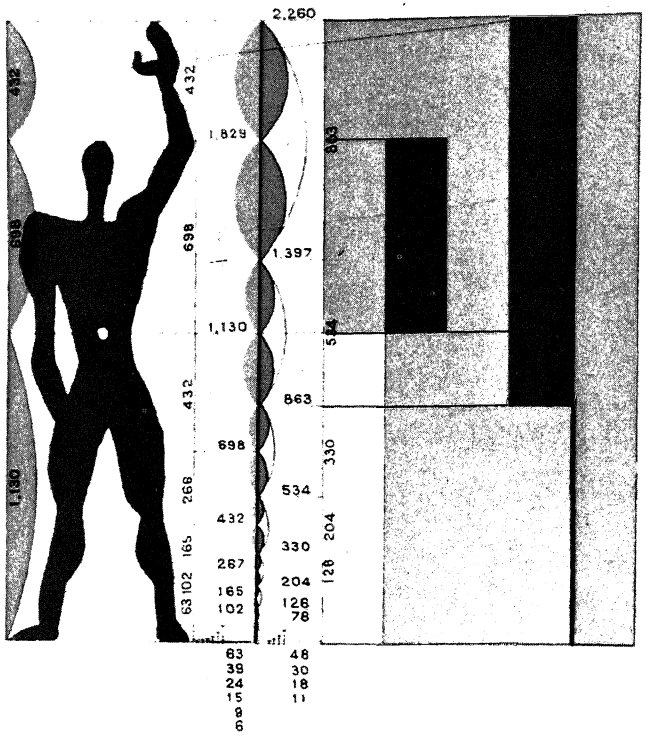
Scale and Space

In the urban environment scale and space are concerned with relationships.

Scale is first of all the relationship of people to buildings, that is, of people to the whole man-made environment. Man is the measure of all things—this is often called the absolute scale. But scale is also the relationship of buildings to each other, of buildings to the street, the square, the town or city—this is called the relative scale.

Scale refers to size and proportion. Something is "in scale" if it fits a particular yardstick; in the urban environment this yardstick is a human being. We are familiar with a musical scale or the scale of a map: A scale in that sense is a measuring device.

How do we perceive scale in the urban environment? What do we look for? Scale as a measure refers to height, distance, and size.

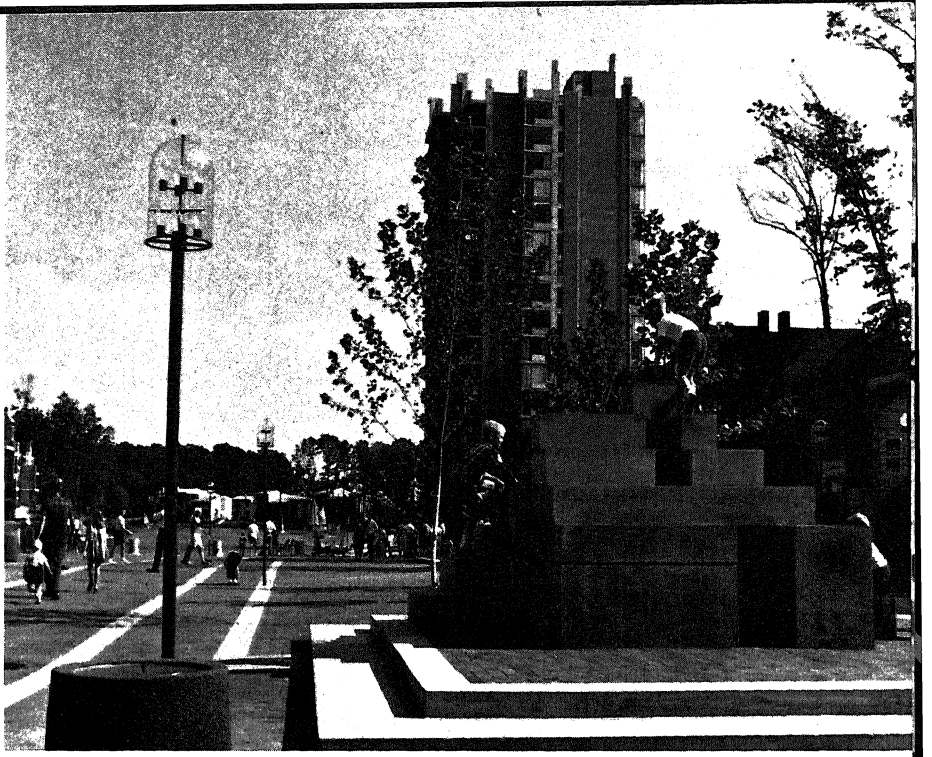


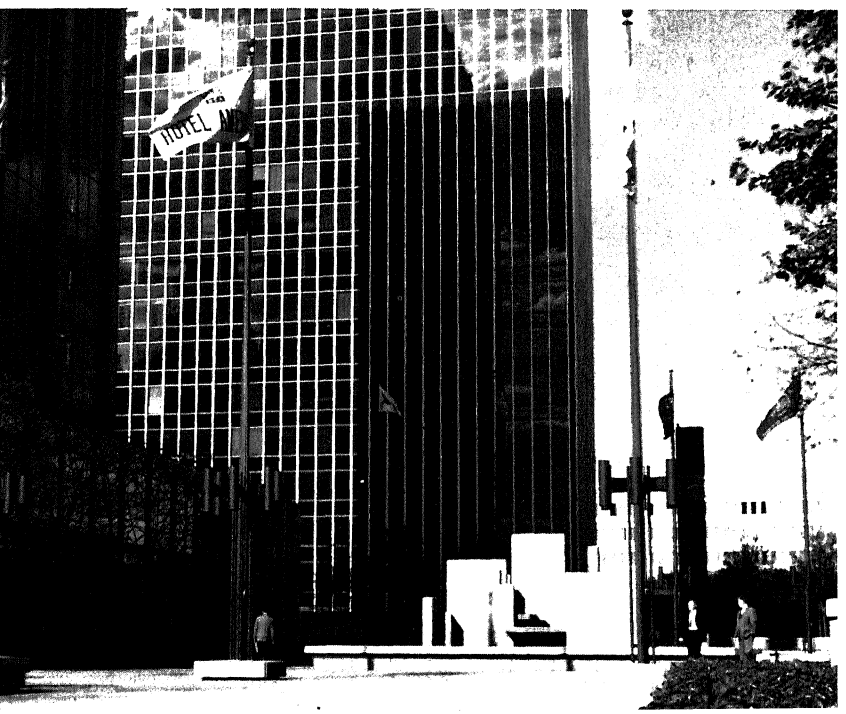
Man is the measure of all things

Scale is the relationship of people and buildings

Scale is the relationship of buildings to each other


FARMERE

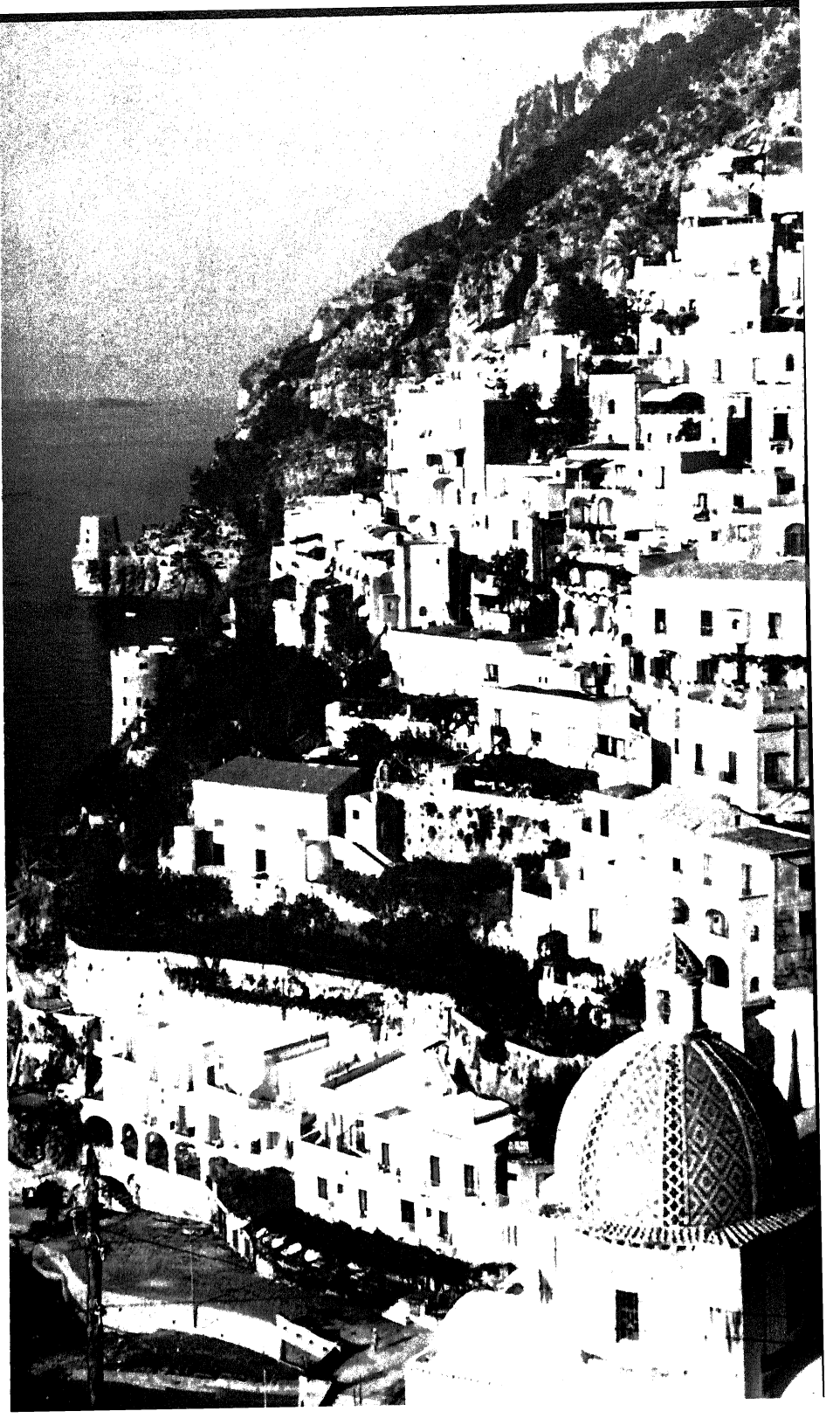




The new scale of modern technology

Towns and cities originally were designed around human beings. Their circumference was largely determined by the distance people can walk. The height of the buildings depended not only on the building materials but also on the ability of the inhabitants to climb stairs.

Our new transportation and building technology has utterly disrupted the traditional scale of a city. Superhighways and rapid transit systems have stretched the cities' circumference out of all porportion; elevators and new building technology have shattered the vertical limitations.

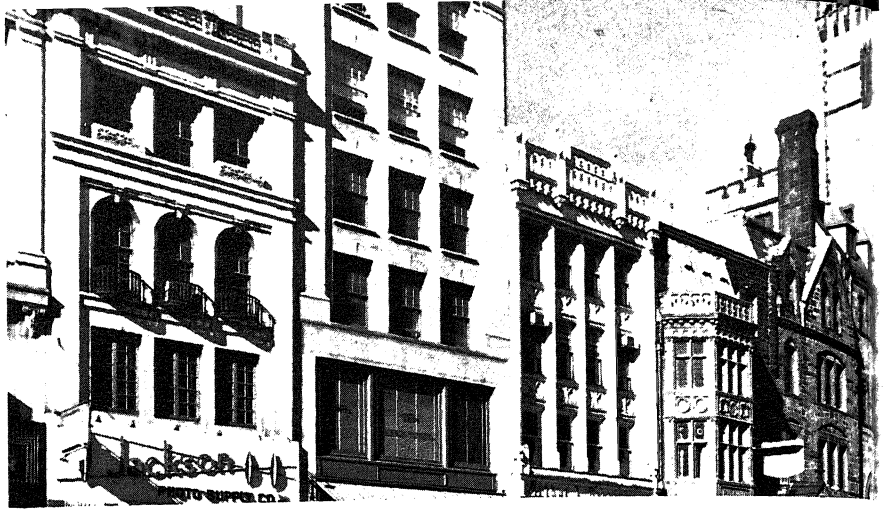


The traditional scale

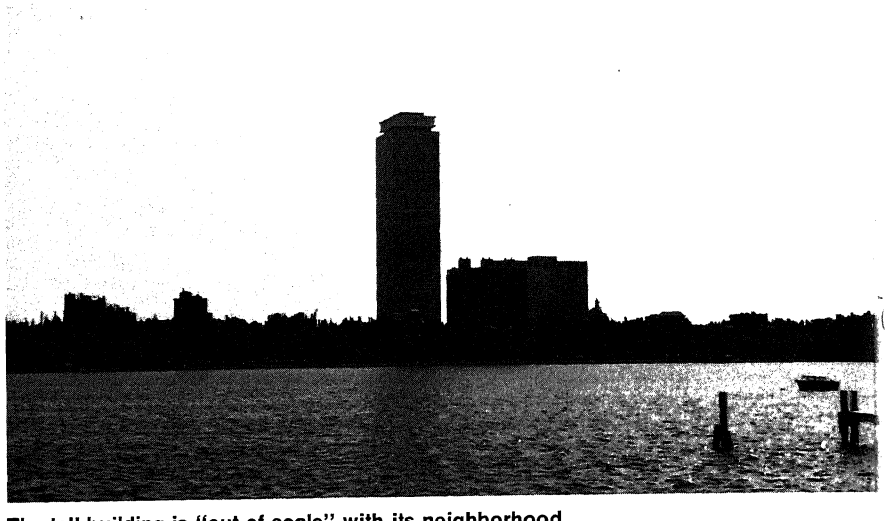
Scale is one of the most important factors in our environment. We are accustomed to things being of a certain size. We judge distances and height by this accustomed scale or measure. We determine the size of a building (or object) by something familiar which is nearby, for instance a tree. As long as the proper (familiar) relationship exists, we think we know the answer. As a result we are sometimes tricked. A doll's house seen through a peephole can appear full size if the human connection is missing. Buildings and objects also look quite different depending on our point of view, that is, from where we look. We depend on our experience and associations that form the basis of our judgment. A small child will literally reach for the moon because it lacks the experience of distance or, in fact, a scale.

"Out of scale" means that something is too big or too small in relation to a given measure. If you wear a size 12 dress, size 18 is too big; it is out of proportion to your own measurements; that is, it is out of scale. But scale also refers to such details as an enormously big decoration on a small building that looks out of place. A very large hat or a dress with a big pattern makes a small person look ridiculous because it is out of scale.

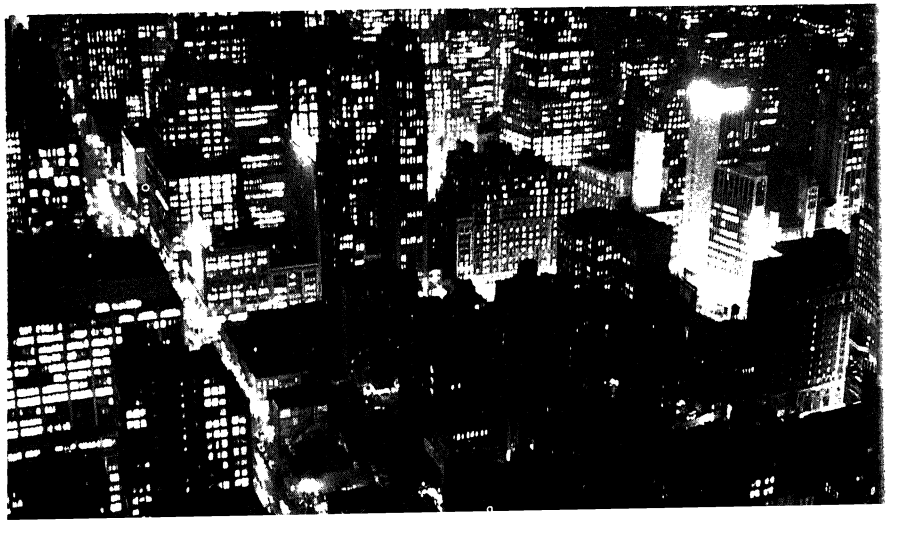
A very tall building in an area of walk-up apartments will disturb the scale of the whole neighborhood; it seems quite out of place. Then when more tall buildings are built, they establish a new taller scale of their own, and some balance; that is, a new harmony is once more achieved.



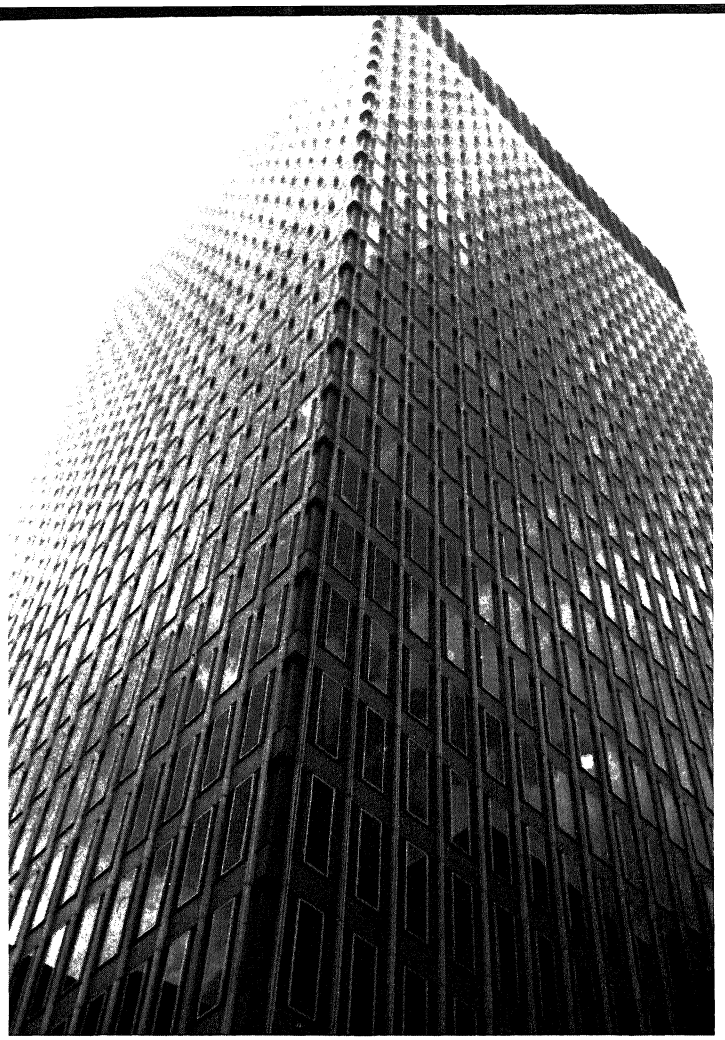
These buildings don't relate



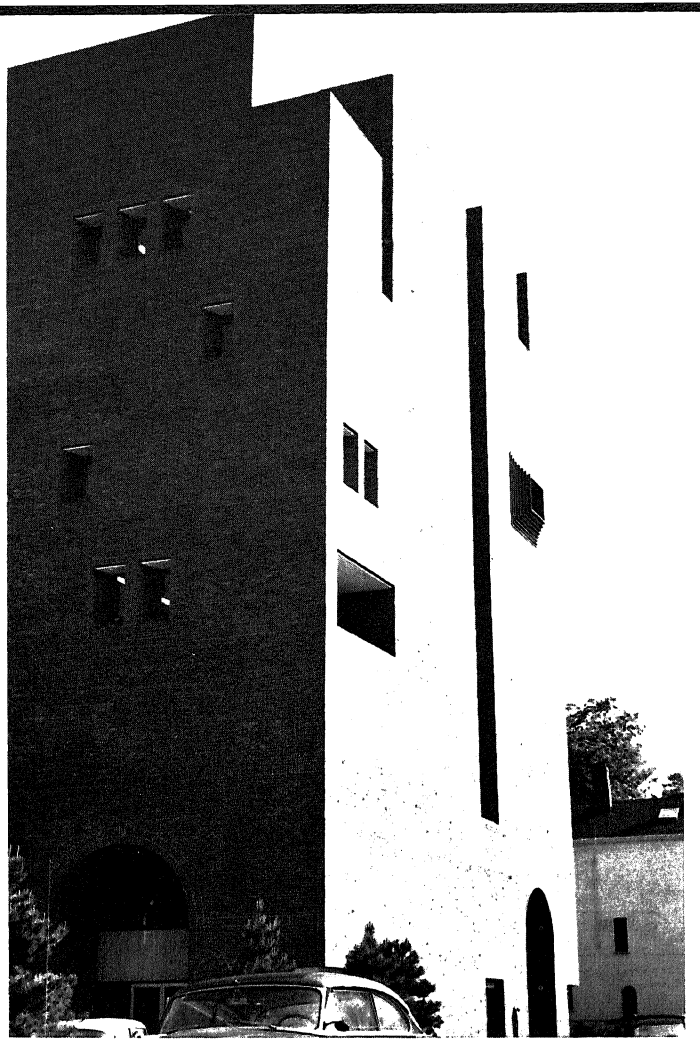
The tall building is "out of scale" with its neighborhood



The new tall scale



The human relationship is missing



Irregular windows give no clues

When we are close to a skyscraper, we cannot tell if it is twenty or fifty or one hundred stories high. Looking up, it seems indeed to reach into the sky; the human relationship is missing; we are confused.

Windows and doors establish this human relationship. Buildings with irregular or no windows give no clues as to their height; we cannot "read" them, and this is disturbing.

The design and organization of a building façade is of importance, as are surface patterns and decorations. The familiar size of bricks, for instance, establishes a notion of height and size. Trees and greenery tie buildings to the ground and act as a measuring device. When we look down a street, buildings act and react to each other and establish a scale and unity of their own.

Bigness is impressive only up to a point; when buildings, bridges, or monumental objects overpower us by their size, it is beyond us to relate to them. They are of extra-human scale. We can't take it all in, and so an over-large building or space fails to really make its point.

Scale in the broadest sense, therefore, is really a measure which establishes relationships in the urban environment; but scale of the present view of the environment is also established by connecting it with a remembered one.

The street can be broad, with trees

The street can be narrow, without trees

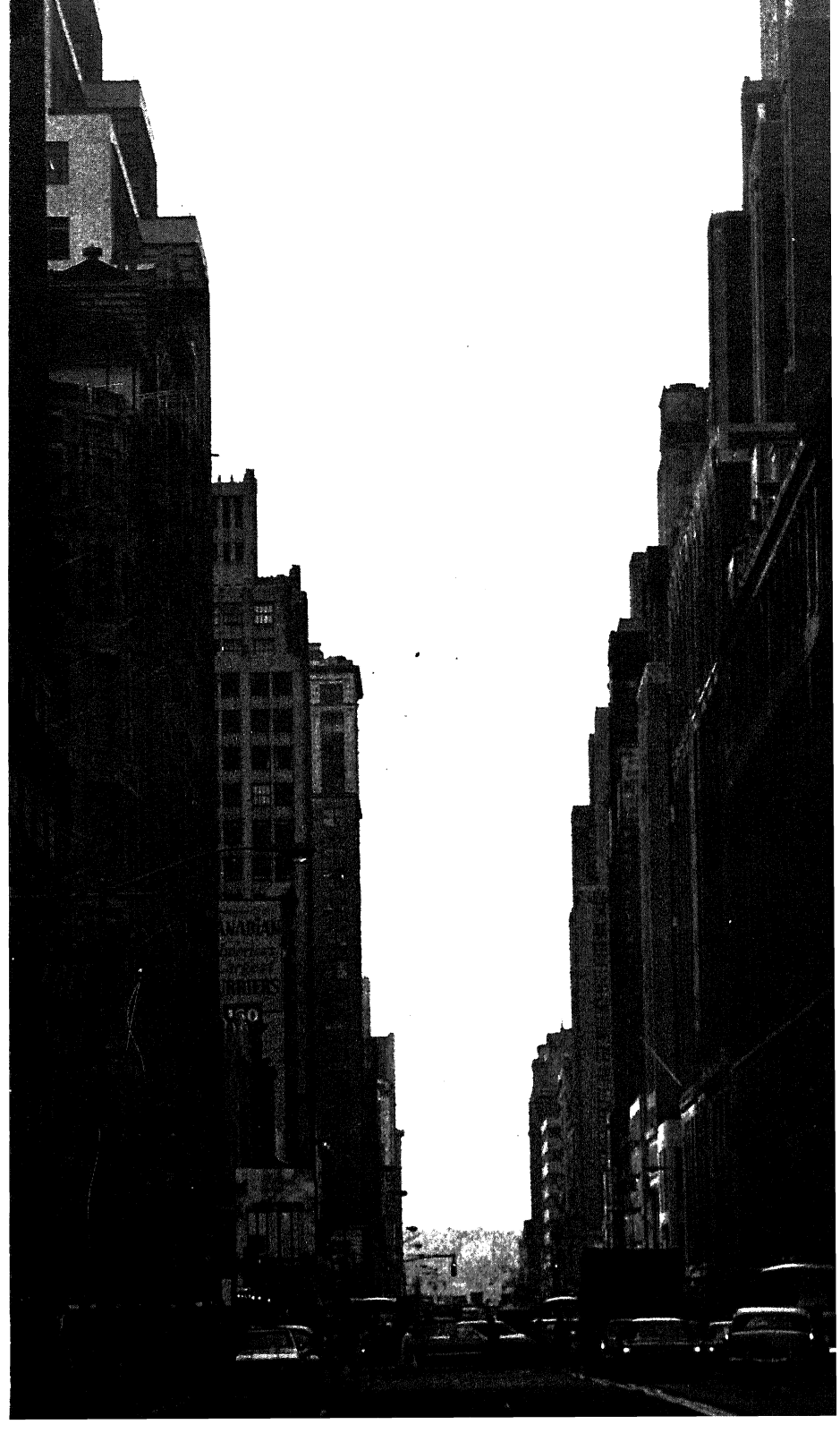
Space in the urban environment is the area between buildings or the hollow inside a building. Visually we can think of a street as a negative volume which by its absence defines the positive form of a building; in turn, the buildings surround and define the space.

The space of the street can be narrow or broad, empty or filled with trees, benches, signs, traffic signals, advertisements, street lamps, booths, wires, telephone poles, and of course people and cars. A street can be straight or curved; it can be widened into avenues or malls, squares, or plazas.

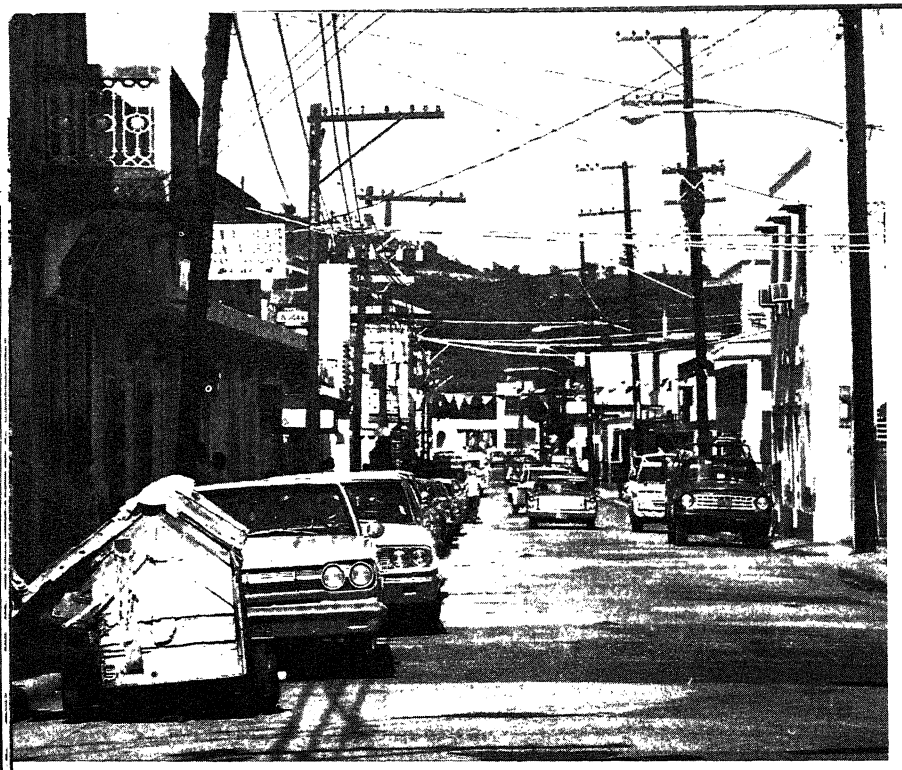
How do we perceive space? The shape of the space is defined by the surrounding buildings—exterior space; and the buildings contain space—interior space. There is an interaction between buildings and space which creates the total view. But you have to walk through a street or square and around the buildings to really perceive and get the feeling of space. Because space is three-dimensional, that is, a volume, and therefore it can only be experienced by looking from all sides. To really perceive an open space, a square, or street, we should see it at different times of the day and in all kinds of weather.

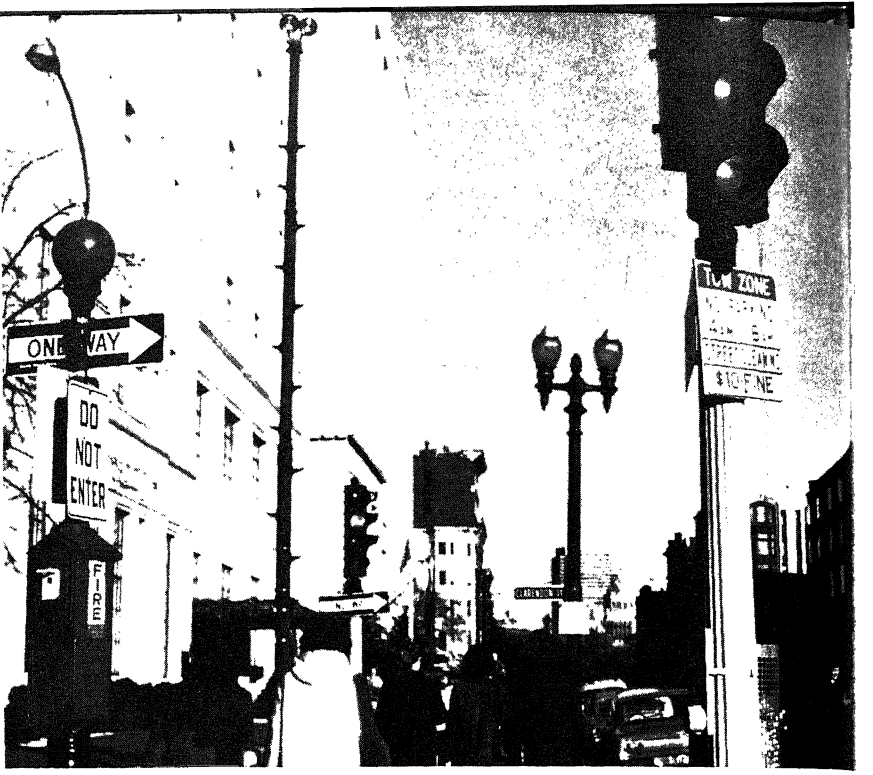
We experience space in sequence; that is, we see one space after the other as we walk or drive through an area of the city. For instance, traveling down a street, we come to an intersection, a block of tall buildings, the view of another street, again a row of buildings, then an open square, and so on. The sequence or succession of spaces influences greatly what we see, because an urban space is perceived in relationship to buildings and in relationship to other spaces.

A big space is impressive because it makes us feel small. But if an open space or square in a city is too big, it only succeeds to make us feel lost rather than impressed. In the opposite case a space or street that is too small or too narrow is oppressive; we feel hemmed in and uncomfortable, yet we often can't see by what.

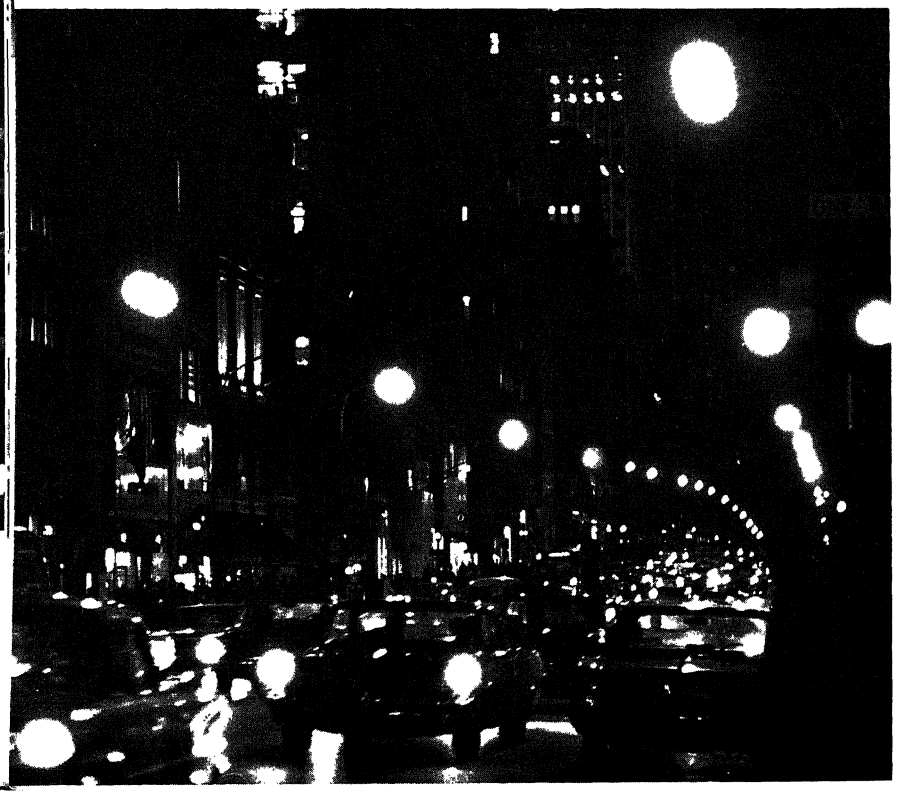


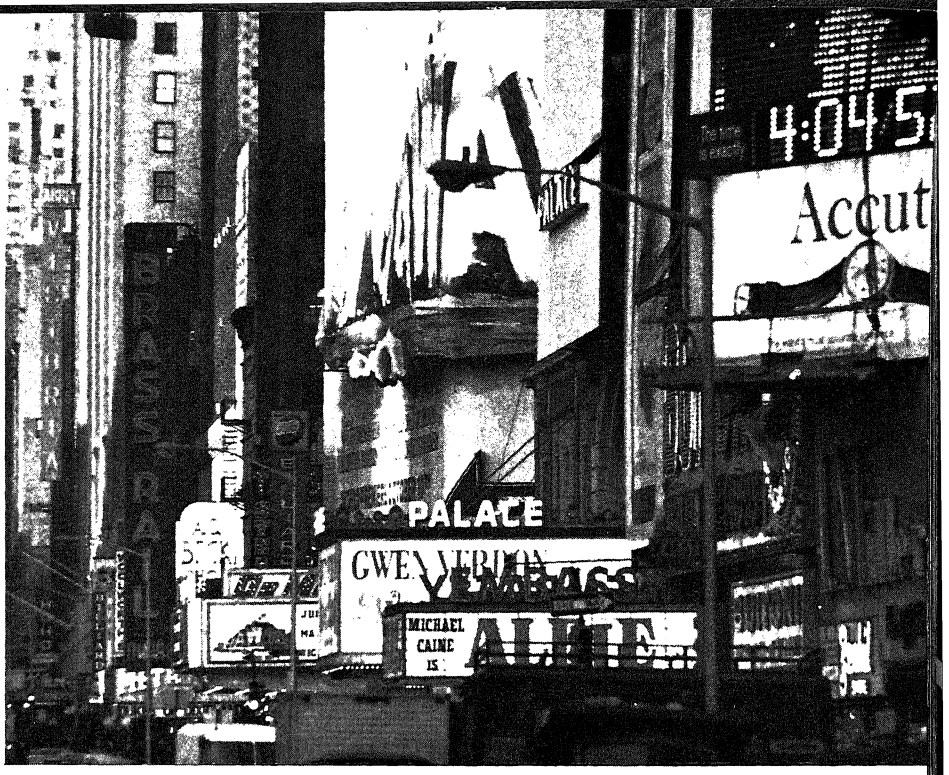
Space is the area between buildings





The street is filled with cars, trucks, advertisements, lamps, street signs, telephone poles, and people

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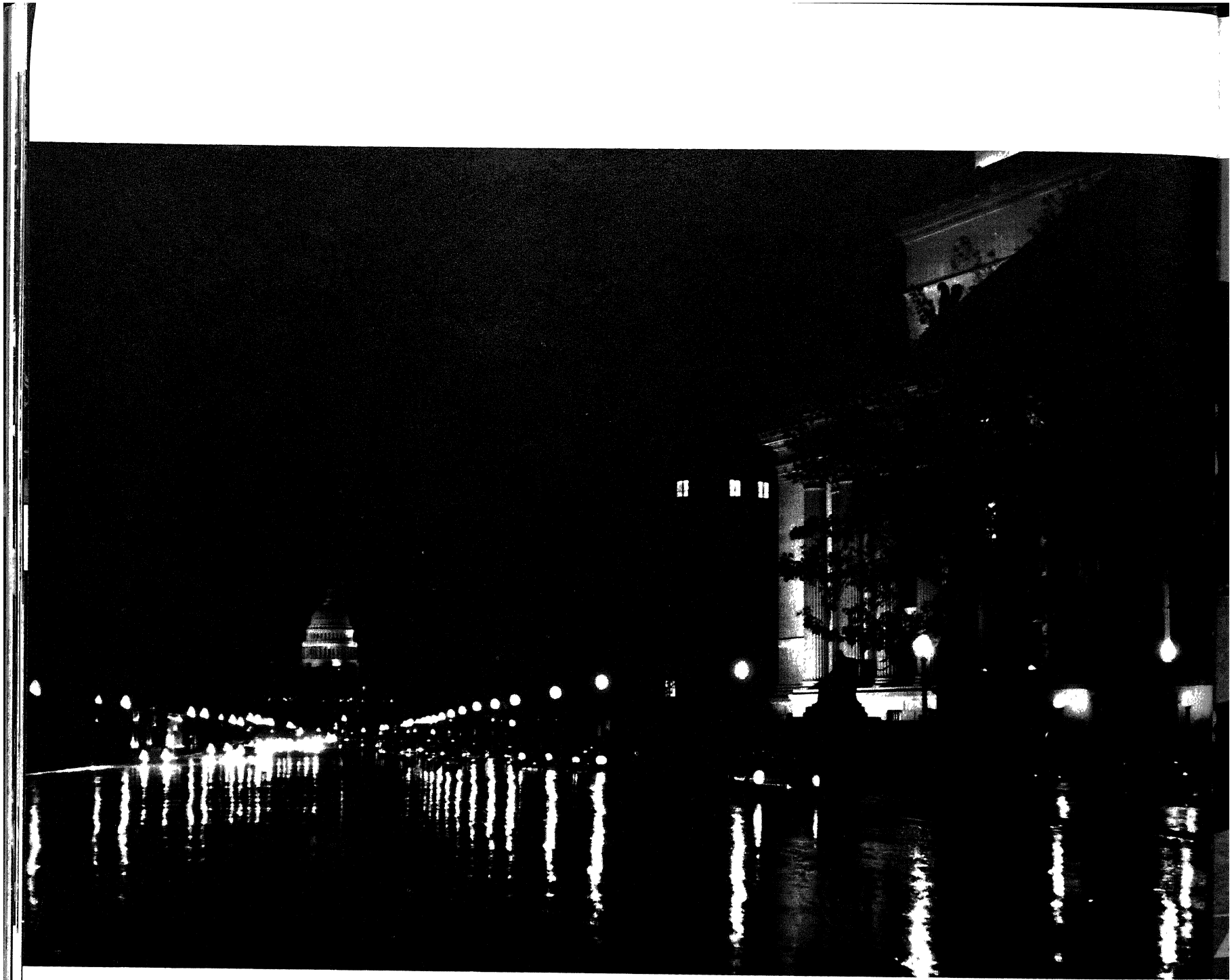

Space can be widened into avenues . . .

and plazas

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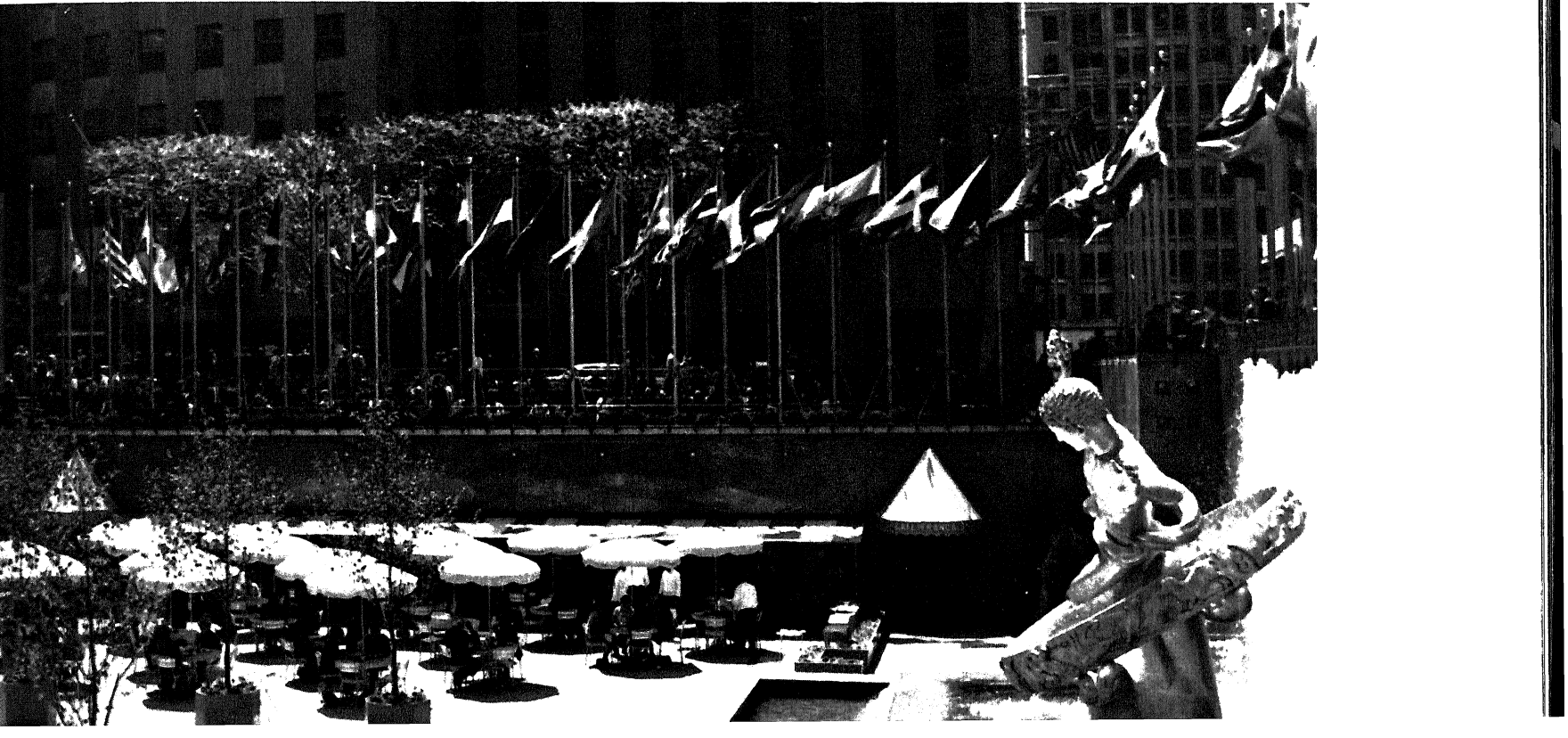
Rivers create distance; water becomes a multiplier of space

To convey the idea of bigness, architects and city builders often rely on contrast. To come upon an open space or square through a long and narrow street is more impressive than to see it after traveling along a broad avenue. Often we are too close to a building to see it in its entirety. To "read" an urban area, building or space, we also must see it in its context: we need a certain distance or space to understand the building within its environment.

Rivers and lakes and open bodies of water create such distance; their space defines the city form. But water also adds a new dimension in depth through reflection: in this way it becomes a multiplier of space.

Parks and flowering gardens are open spaces of respite and recreation. They act as setting for the architecture; they provide the needed contrast and change. The landscaping of a building becomes an active partner of the whole. Planted courts with benches, flowers and trees in the middle of a city are much needed areas of refreshment and provide rest for people and their eyes.

Spaces of rest and refreshment

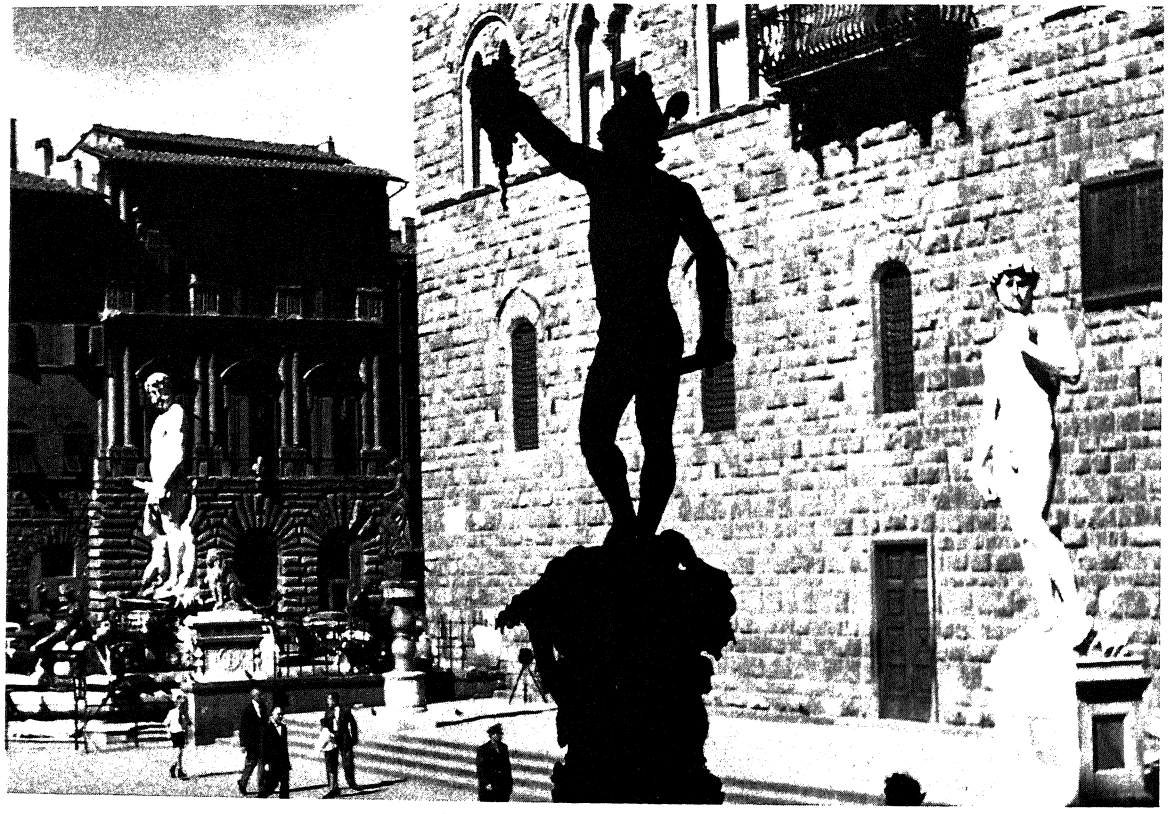


Urban squares and spaces are decorated by monuments, fountains, columns, and arches. Statues often provide the name, focus, and orientation for a square, besides being a landmark for the whole neighborhood. Colonnades form a transition between buildings and the space, between indoors and out. Fountains throughout history, as the source of all-important water, were functional and social centers of every neighborhood. Their number and the quality of their water often determined the failure or success of a town. Now fountains are visual and decorative features that contribute liveliness and gaiety with the movement and sparkle of light on the water. They are important centers of attention, and sometimes they even dominate their space.

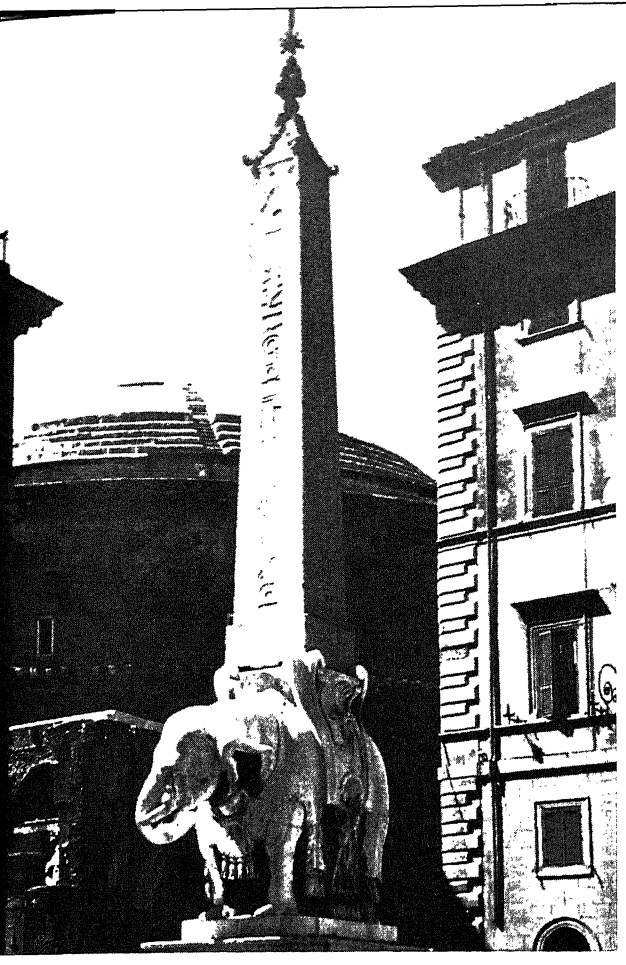
Stairs form vertical space connections between different urban areas; they provide the orientation of open urban spaces and squares. Stairs are a functional link that in itself becomes a visual center of attraction.

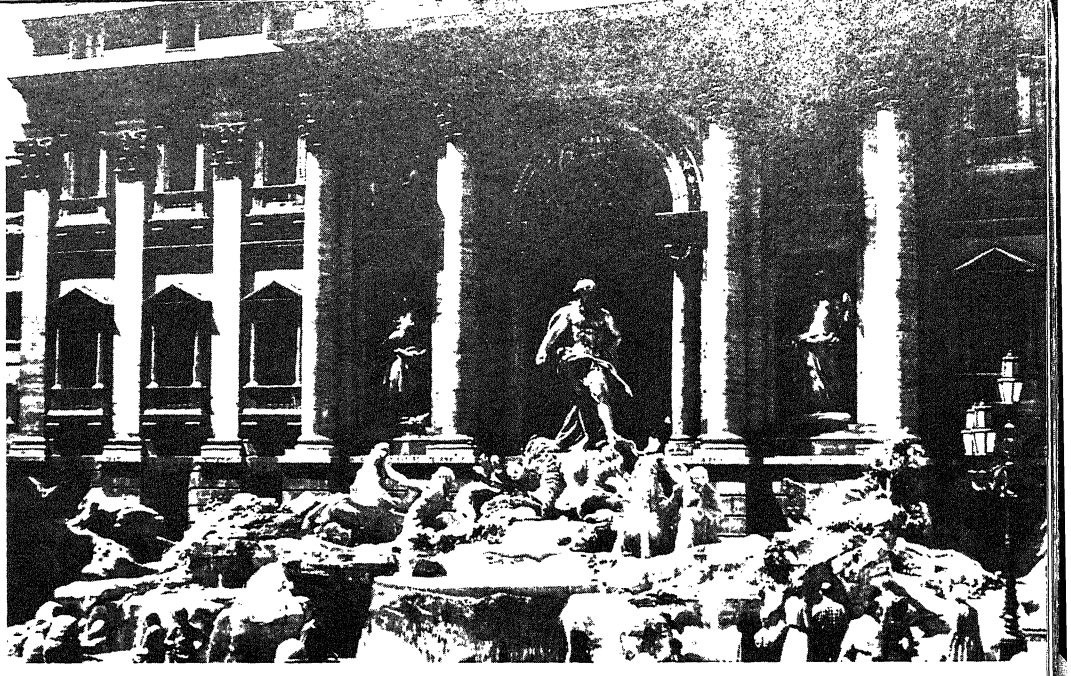
Bridges boldly span the space as triumphs of engineering and imagination. In urban areas bridges are all-important connectors and traffic collectors. Visually their often breathtaking lightness and grace provide contrast to the solid building forms. Historically, bridges determined trade routes and traffic intersections and became centers for settlements and towns. In some old cities, bridges are part of the urban fabric with shops and markets, like the Ponte Vecchio in Florence or the Rialto Bridge in Venice. London Bridge so captured popular imagination that it is still perpetuated in one of our favorite nursery rhymes.

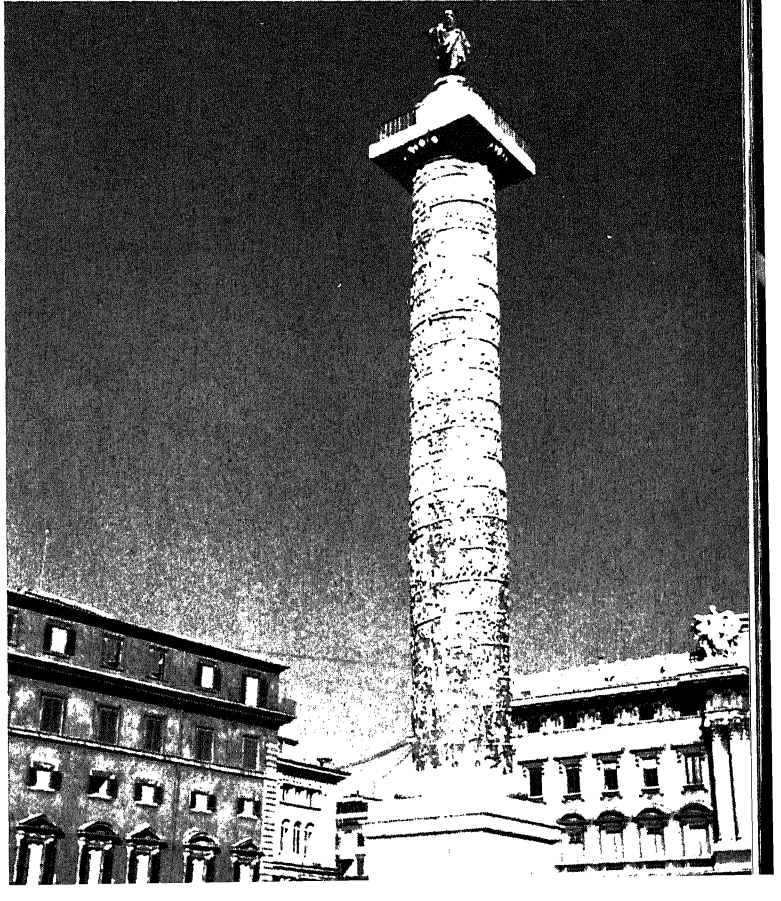
Space and scale are visual abstractions and therefore difficult to imagine as an idea. But in the reality of the city, once we know how to perceive them, they are ever-present measuring devices of success or failure of the urban scene.

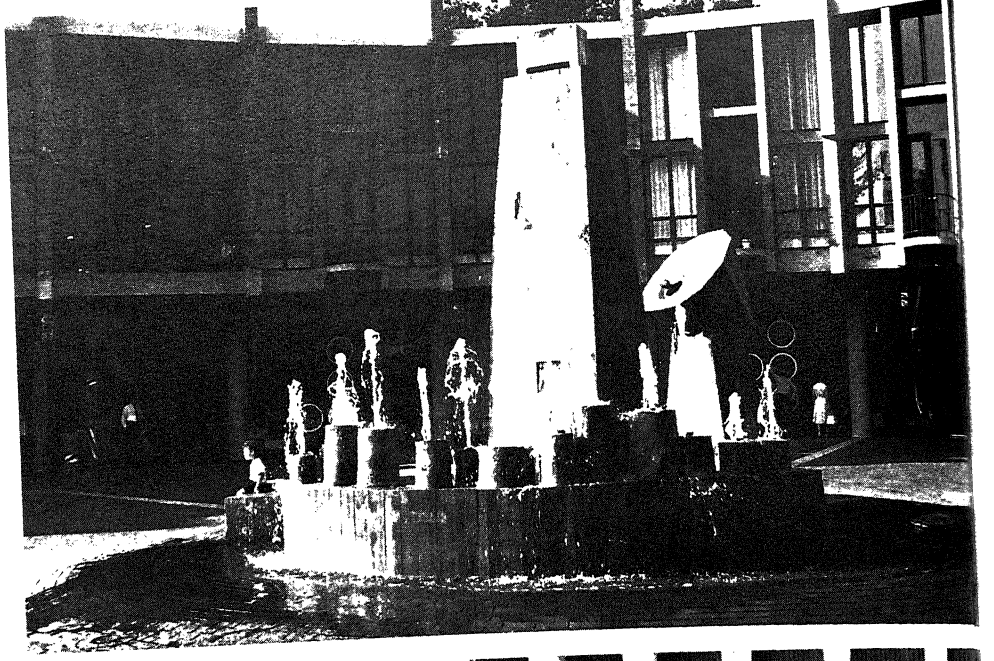


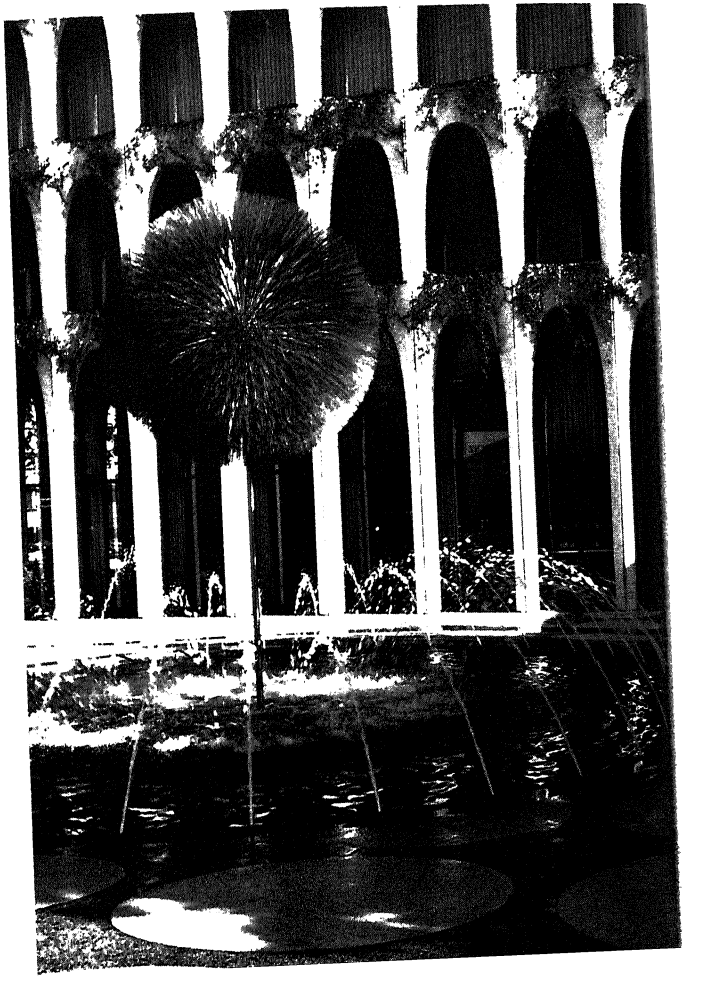
Urban spaces are decorated by monuments, fountains, columns, arches



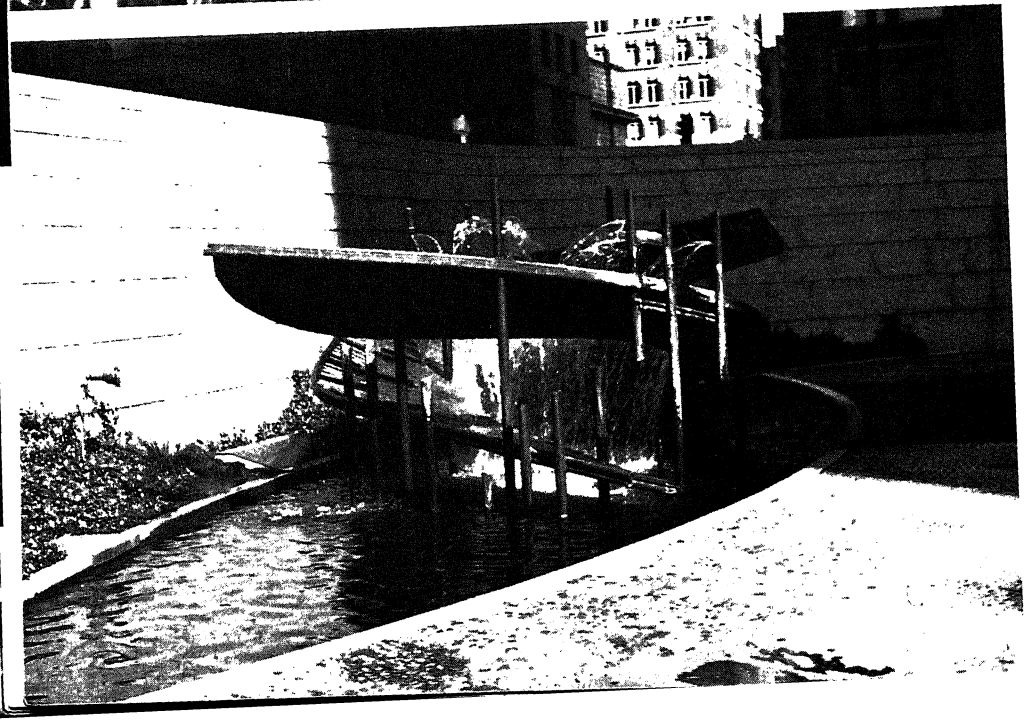








Fountains contribute gaiety



Stairs form vertical space connections

Bridges are part of the urban fabric . . .

. . . or boldly span the space

Light and Shadow

Light is a form of radiant energy. To the physicist visible light is waves which form the visible part of the electromagnetic spectrum given off by a luminous body. The visible spectrum, located between infrared and ultra violet, consists of red, orange, yellow, green, blue, and violet; each color corresponds to a specific wave length. By means of a prism, white light can be broken up into its colored components.

Light is the energy which makes light-producing bodies visible (such as the sun or an electric bulb), but light also makes light-reflecting bodies visible, such as the moon and, in fact, our whole environment. Transparent objects permit light to pass through, such as the air or glass. Translucent objects allow light to pass through, but it is scattered in the process. Finally, opaque objects don't transmit light at all.

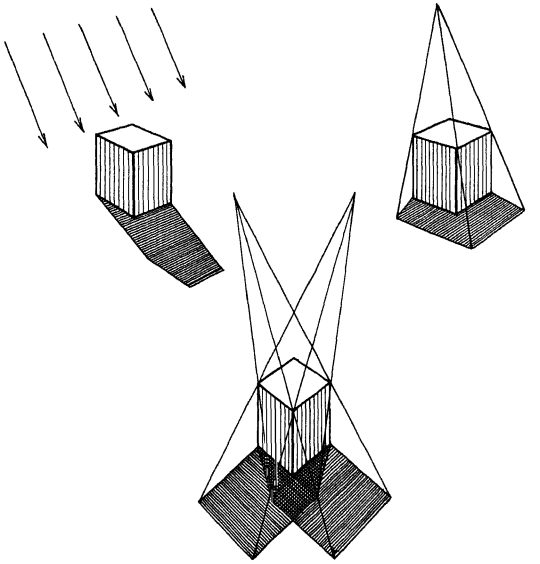
Light is measured in footcandles. A footcandle is the light produced on an area of one square foot at distance of one foot by a light source of one lumen intensity. For example, for office work about 100 footcandles are recommended; for drafting and designing twice as much.

The primary colors of light are red, green, and blue. Complementary (opposite) beams of colored light make white light where they meet. That is, a beam of blue-green plus one of red-orange becomes white on a white surface.

An opaque colored surface absorbs all the colors from the white light rays except its own, which is reflected. A red surface, for example, absorbs all the rainbow colors contained in white light but reflects the red back into your eyes. A color can be defined by what it absorbs from the white light rather than what it reflects. This absorption method can give us exact results of color and light combinations. In practice, this is used in stage and theater lighting and for special effects in exterior lighting.

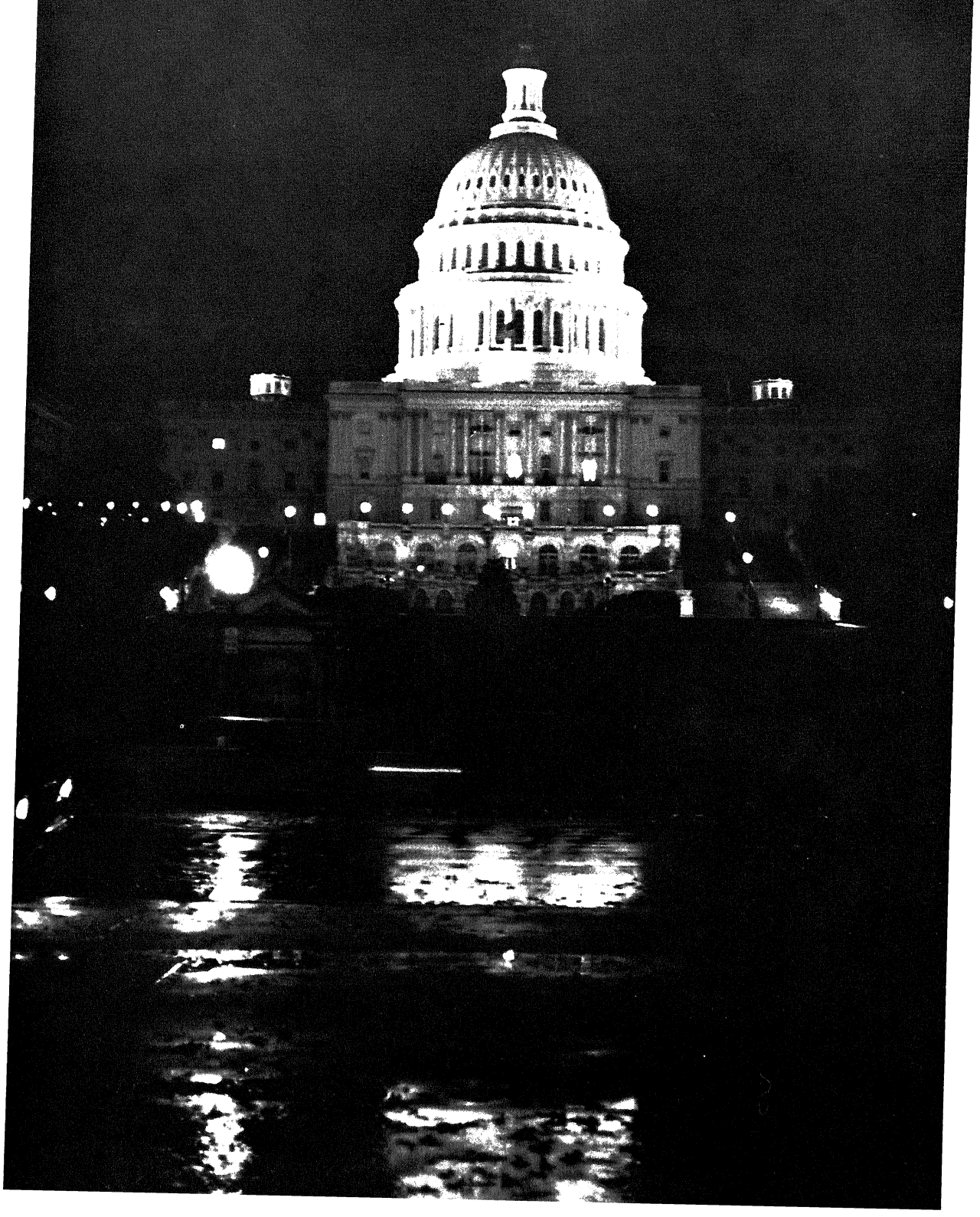
The everyday urban environment is mainly affected by sunlight or by artificial light at night. What we see is also affected by how well we observe, especially the effect of light in our environment.

Sunlight forms a parallel beam because the sun is such a large source and is so very far away. As a result, the shadows are cast in proportion to the object. Shadows cast by a lamp or light bulb, which is a small light source and nearby, behave quite differently and spread out. Several small light sources close to an object create conflicting shadow patterns which in turn depend on the intensity of the source.



Morning and evening light are different from the light in the middle of the day. As the sun gets nearer the horizon the light must travel through much more of the atmosphere: the blue or short wave lengths of the light are scattered, while more of the red and orange or longer wave lengths go through. Therefore morning and evening light is not only less intense than midday light but it contains more red and orange. This is something to remember in color photography. Shadows also change direction and grow much longer until they disappear with the setting sun.

A directed light beam is often used to advantage when lighting up a building or outdoor space at night. Flood lighting from below can achieve very dramatic effects because we are used to seeing buildings lit from above. Buildings are "washed" by light if the light source is close to the building and the light beam directed almost straight up (or down).



Washed by light

Artificial light, or electric light, is mainly produced by either incandescent or fluorescent bulbs. Recently new kinds of light sources have been developed, such as mercury lamps, high-intensity vapor lamps, quartzline lamps and others, mainly used for outdoor urban illumination. The efficiency, light production, and color control of light bulbs has been greatly improved, and this in turn has very much affected how our cities and environment look at night.

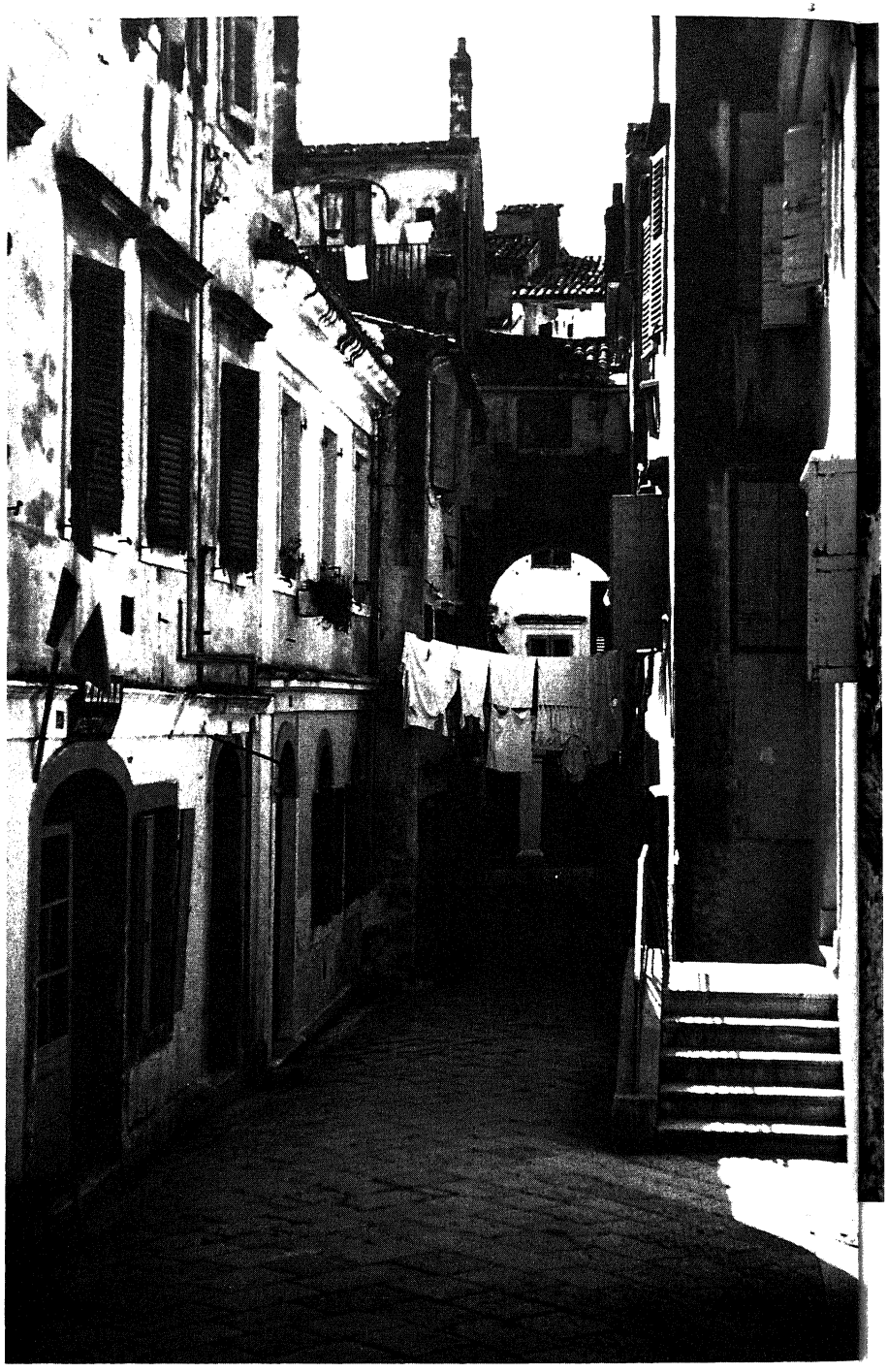
However, it is well to remember that most incandescent lamps (chiefly used in homes) contain more yellow than daylight, which gives the light a warm effect. But they also make all blues fade out. Fluorescent lamps now come in a multitude of colors and are used everywhere. Some of the new warm tones enhance colors, are flattering to people, and have none of the harshness that we often still associate with the early fluorescent bulbs. Since fluorescent light bulbs are larger in area, they also illuminate surfaces more evenly than the small incandescent lamps.

Today many office buildings and stores have luminous ceilings of fluorescent lamps, which create an over-all illumination of almost shadowless light. This kind of lighting makes for very good working conditions because it eliminates glare.

Glare is created by contrast, by a brilliant light source in a dark space or by a brilliantly lit reflecting surface surrounded by much darker areas. Our eyes get tired by having to adjust constantly between light and dark. We are trying to see something in the darker areas while being blinded by too much light in an area close by.

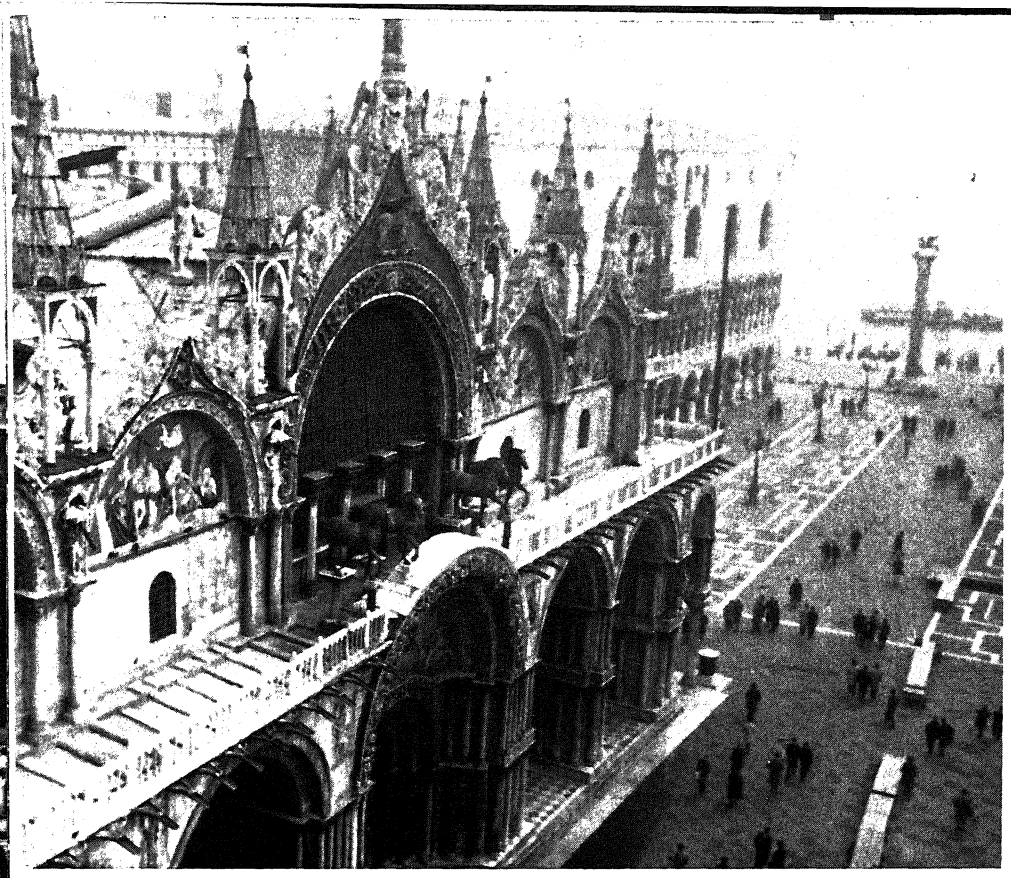
How does light affect the urban environment?

Light and shadow define the visual world, buildings and cities, the physical forms of the man-made environment. Light and shadow can also change completely literally everything we see. Strong sunlight makes everything much gayer and brighter and gives the urban world a more cheerful look; while in the shadow of darkness, form and color—our whole environment—fades and seems to disappear. Yet since we have electricity, each night a whole new life begins in the cities; the windows become brilliant patterns of light while the shapes of the buildings dissolve into the shadows. Street lamps and flashing signs, traffic lights and brilliantly colored advertisements, hang in midair above the streets and over the constantly moving patterns of the headlights of cars.

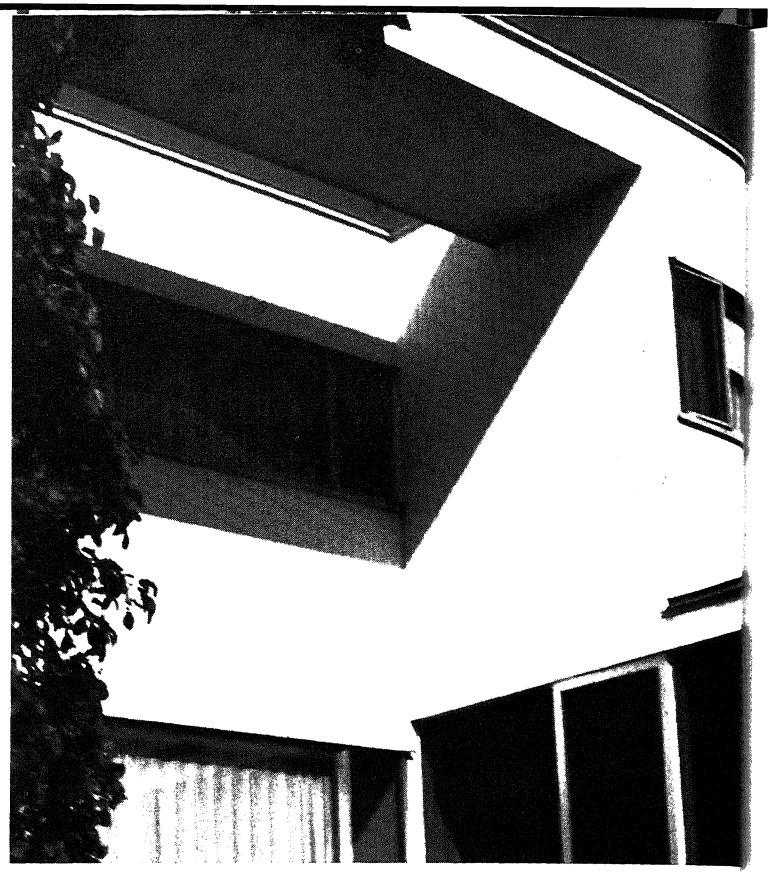


Some narrow streets get hardly any sun

Morning and evening light change the environment



Fog flattens the light



Overhangs designed to protect windows

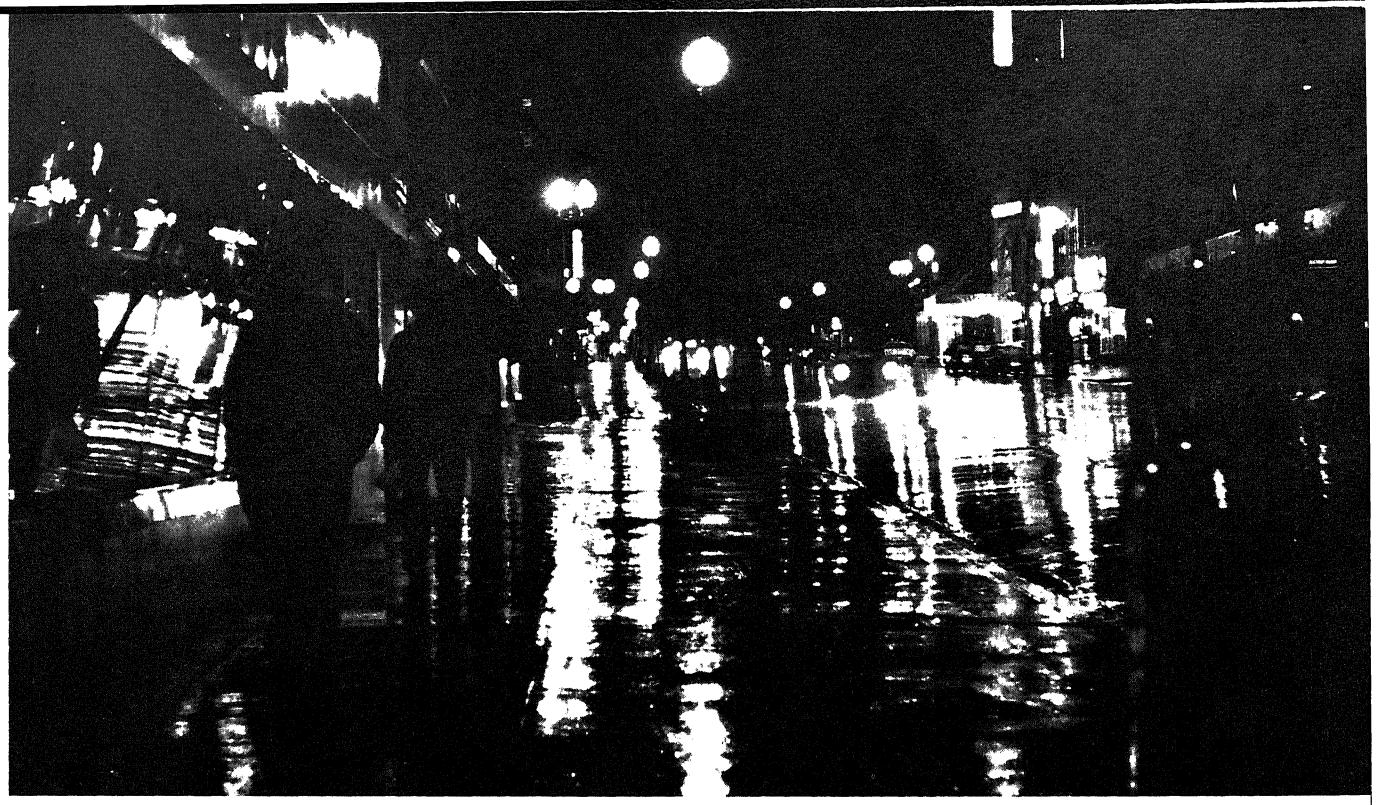
If we really want to see a city or its buildings, we should look at them not only at different times of the day but also in all kinds of weather. The change of the light from bright sun to rain, from a clear sky to fog, completely changes the visual appearance of the environment.

In a northern country, the light affects the buildings quite differently than further south or closer to the equator. In the north, the sun is not only less bright, but the shadows are longer. In winter, some narrow streets may not get any sun at all. In a northern (or southern below the Equator) latitude, the angle of the sun changes considerably between summer and winter, and this in turn changes the way the environment looks at different times of the year. Shadows appear in different places and grow or decrease with the change of the season.

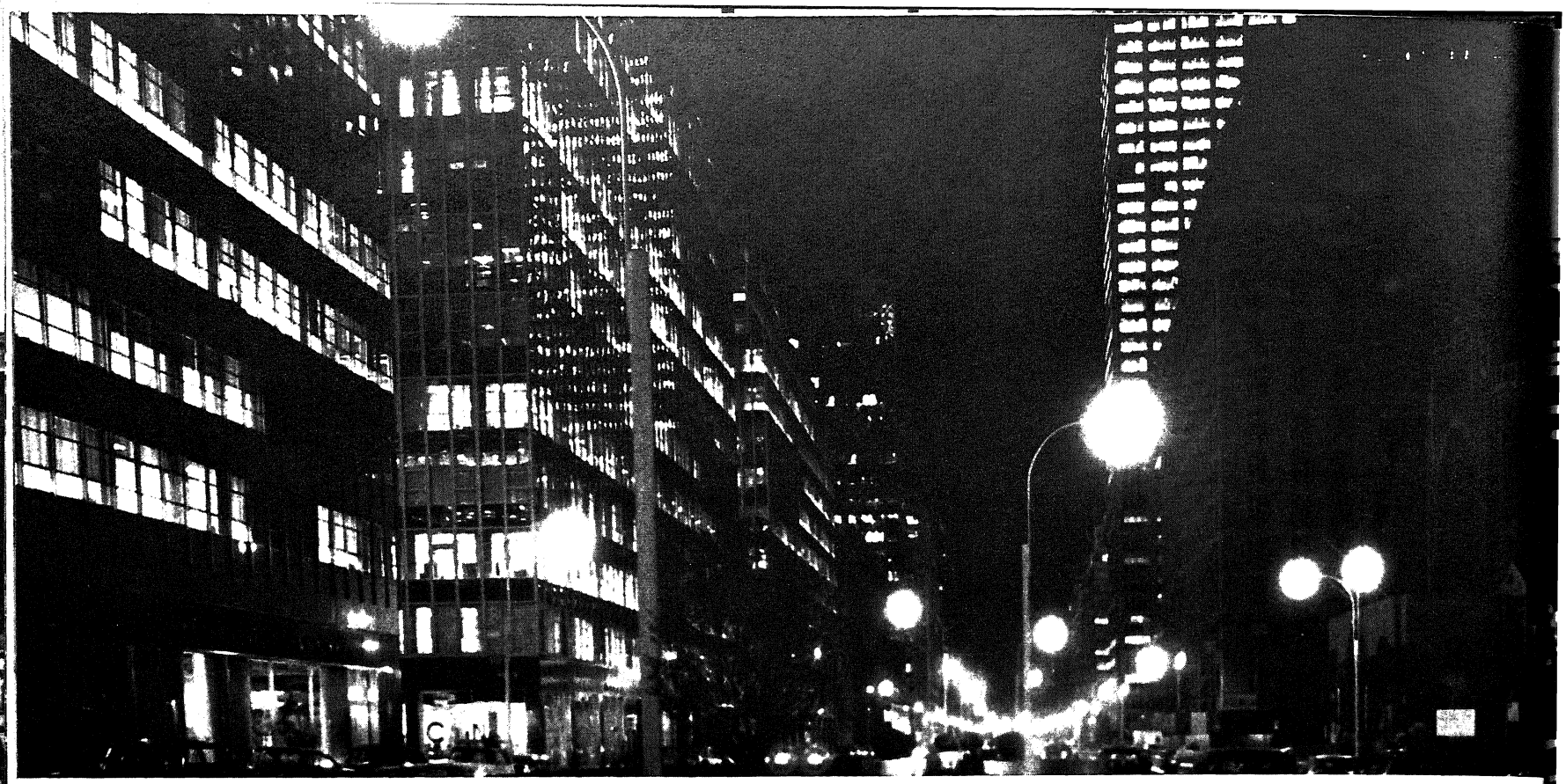
In urban design as well as architecture, the orientation (north-south or east-west) of a street, square, or building makes all the difference to its visual appearance because of the change in relationship between sunlight and shade. Sun shades and louvers on buildings can be designed exactly to protect windows from the direct sun at certain times of the day. In a southern climate sun shades and awnings also protect from heat and glare.

Rain, with the reflective quality of water, creates an entirely new urban view. The wet and shiny pavement suddenly becomes so many mirrors, adding a new quality of depth to the street. Unexpected surfaces begin to sparkle with a new life when washed by rain. Textures and colors of materials change. What we know to be dark suddenly is brilliant by the water's reflection, and the very ground dissolves into shining, ever-moving lights.

If you want to see a new kind of fairyland, observe a busy intersection on a rainy night: Watch the magic changing display of colors in the glistening black pavement of the wet streets.



The pavement becomes so many mirrors



At night the city is a modern wonder. The buildings disappear from city streets. We see the lit-up window spaces, whose varied rhythms animate the night. The colors of the lighted signs appear seemingly unsupported in space, while the ugly framework fades away. Movement is everywhere, from hurrying car lights and flashing traffic signals to blazing advertising signs, reflected by unseen glass surfaces that suddenly flash back and glitter.

The city at night has a brilliant life of its own; it appears cast in a new and shining splendor of color and imagination, an exciting fresh gaiety that is asleep during the day. Add to this the black reflecting surfaces of a body of water, which double the magic of the enchanted night.

Seen from the air, the urban structure is much more apparent at night than during the day. The light-punctuated, pulsating traffic arteries stand out even more brilliantly than the lit buildings; the colorful concentrations of business enterprise and advertising signs form brilliant clusters.

To fly at night over a large city is one of the great visual spectacles offered by the modern world. The excitement of our brilliantly lit modern cities surpasses everything the past could have imagined, due to the transformation that electricity has brought to our urban life.

To record some of that dazzling world is easy with fast, artificial-light color film. At night from the top of a high building you can take the most wonderful photographs. Or next time it rains, visit a busy street or intersection with lots of lighted signs; take along an umbrella and your camera. The color reflections in the pavement will create some enchanting pictures, and this will also teach you to observe.

Light and shadow constantly change, and as they do, they change everything we see. Therefore light and shadow are the prime movers of the appearance of the urban environment.

Light and shadow

Washed by rain

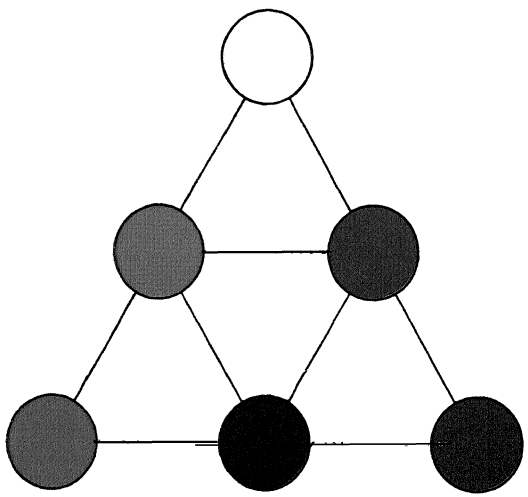
Color and Texture

Color and texture are the surface qualities of the materials which make up our visual environment. Color and texture complement each other and define the surfaces we see. Color and texture are defined by light and shadow. The surface or texture of a building changes depending on the intensity and direction of the light. Rough textures absorb light while smooth textures reflect it. Opaque, translucent, or transparent materials affect the quality of color by altering the light.

Color is defined in many different ways. For artists color means pigment, while physicists are concerned with light. Physicians are interested in the effect of colors on health and vision. In turn, psychologists are concerned with how colors influence the way we feel.

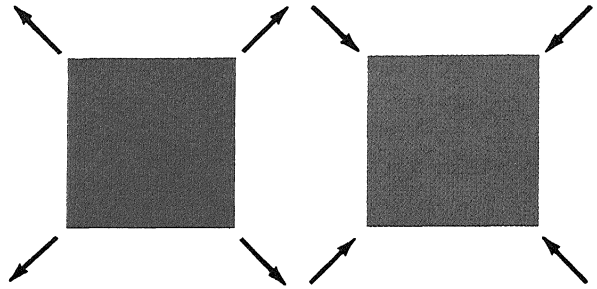
When we speak about color in our environment, we mean chiefly pigment and light. In this chapter we shall discuss mostly pigment, which is now made synthetically; in fact, it is paint or dye. Earlier, color had to be derived from nature, chiefly from minerals.

The primary colors of pigment are red, yellow and blue; all other colors can be mixed from these three. That is, yellow and blue make green, blue and red make purple, yellow and red make orange; many variations can be obtained from different combinations of the primary colors. All colors combined make black, while the absence of all colors is white.

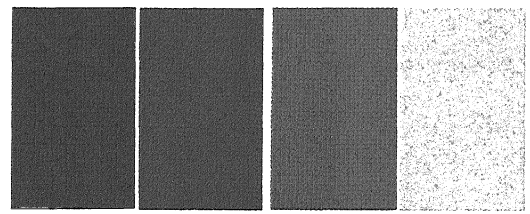


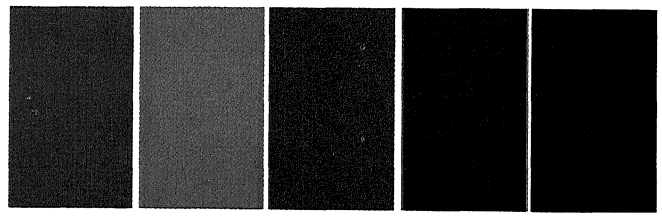
Colors have been defined in the following way by well known authorities on this subject: Hue is the name of the color, that is, red, green, blue, etc. Intensity or saturation or chroma defines the degree of purity of the hue. Value or brightness is described as tint, that is, how much white is added, or shade, which means how much black or gray is mixed in.

Colors are usually divided into warm colors, the reds and oranges, and the cool colors, the blues and greens. Warm colors come forward, while cool colors recede and create the illusion of space.

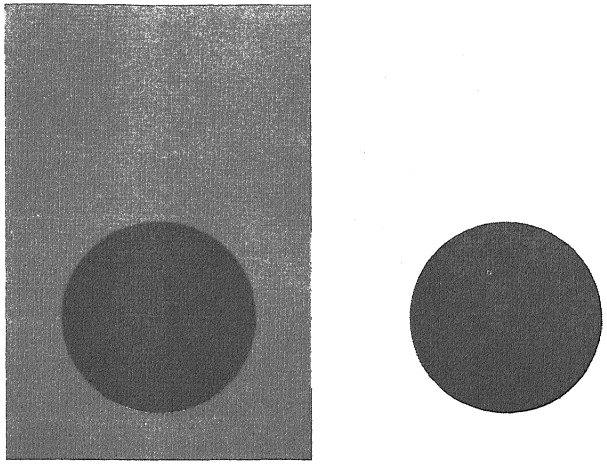


Warm colors also make us feel warmer because we associate them with fire; they stimulate. Cool colors not only make us feel cooler and airy—we associate them with water and sky—but they also tend to act as sedatives and can make us feel depressed.

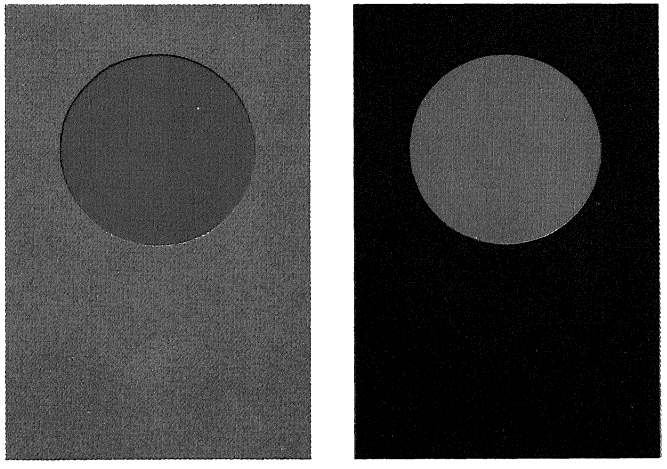




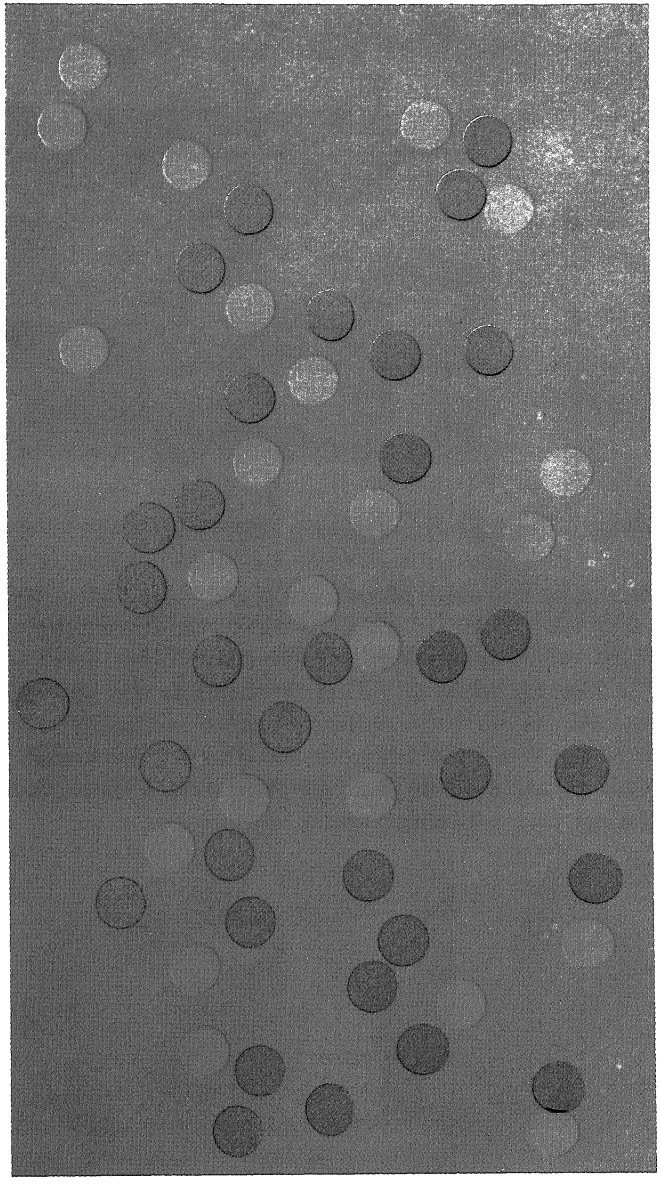
Colors depend greatly on their background and environment; that is, bright colors will be brighter on a neutral background. The same red on a gray background is much brighter than if seen against orange or pink.



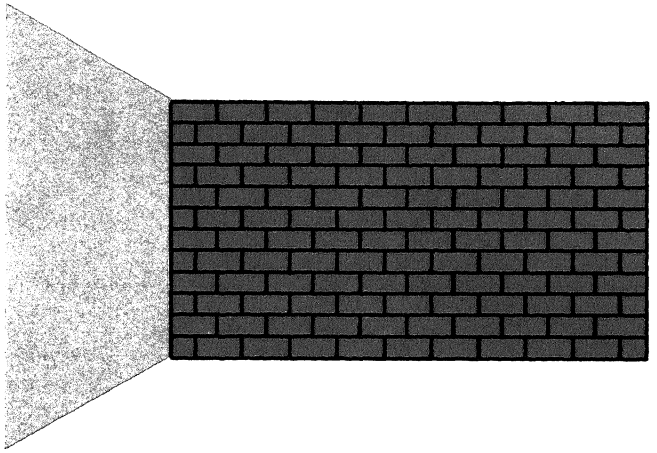
Complementary colors (that is, opposites) will enhance each other; that is, red against green or yellow against blue will appear much brighter.



At times a too violent contrast of color and pattern will make the whole surface jump. Op art is based on that reaction of our eyes.

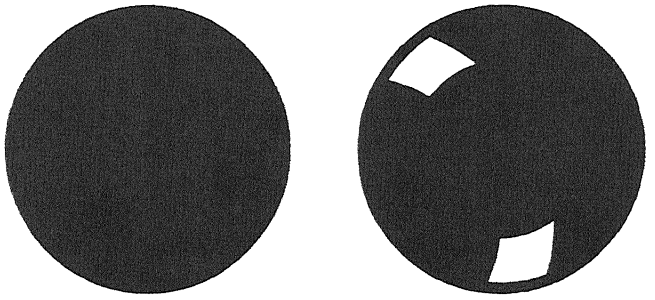


Colors also spill over and reflect on their neighbors. The reflection of a blue-green area next to some bright yellow will muddy the yellow; it will become pale and washed out. A red brick wall, especially in the sunshine, casts a rosy glow over its whole surroundings. Much of the light on the shady side of a street, especially in winter, depends on the lightness and the colors of the buildings opposite.



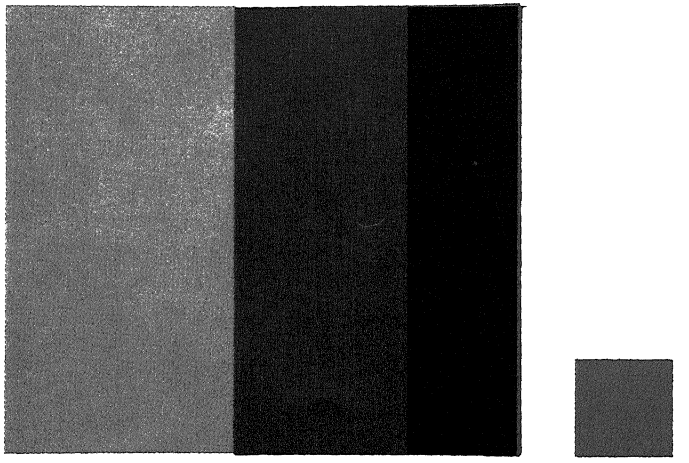
The pointillist painters, by putting small dots of color next to each other, achieved more brilliance. Other Impressionists understood that colors combine and in effect are mixed in the eye of the beholder rather than on the palette; complementary colors close together create a vibrant effect.

In turn, the texture of the surface determines how much of the color we see. If the surface is polished or smooth, much of the light is reflected, and we see less of the actual color used. A shiny surface literally dissolves color, while a flat surface displays color with great intensity.

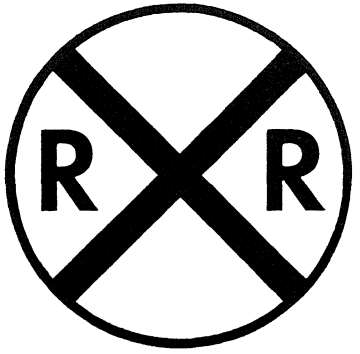


Color balance can be achieved in different ways. Small areas of bright primary colors will successfully balance large areas of the opposite (complementary) hues if those are of less intensity or paler, that is, with white or gray added to the pure hue.

Another way to achieve harmony is to keep within the same color range, using only warm colors or only cool colors of different intensity or brightness. But it is often desirable to add some accents of the opposite for contrast or the effect will be too dull.



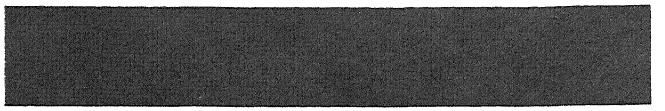
Colors are more or less visible depending on how much light they reflect. Yellow is the most visible color; it reflects the most light. Many traffic signs and directions are yellow, with black for added contrast, because they are easiest to see from a distance. Protective coloring of animals makes them invisible in their natural surroundings, and color camouflage makes use of this fact.



We speak about the temperature of color. Colors not only suggest heat or cold, but by absorbing or reflecting heat they create warmer or cooler spaces. White of course reflects most light and also heat. Black absorbs both light and heat. The temperature in a white car in summer is lower than in one that is dark. Summer clothes are traditionally light as they reflect heat, while winter clothes are dark because they absorb heat and therefore keep us warmer. The New England barns are red for a very good reason—to absorb as much heat as possible in wintertime.

Colors not only influence us greatly—they act as stimulants or calm us down—but they also carry a host of traditional associations. These vary greatly, depending on the country, culture, and environment. Here we must also consider our personal predilections, our skin and hair color as well as the complexion with which we are born. Our childhood experiences are often connected with colors—toys appeal to children by their bright primary colors. We have been told what colors will "do" for us, rightly or wrongly, in the selection of clothes or our home environment.

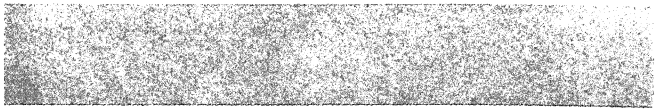
We connect with colors a multitude of symbols and meanings which all have a bearing on how we judge and react to our environment.



We give as first prize a **blue** ribbon, but when we are sad we have the blues; there are the expressions blue music, the blue laws, and of course blue Monday. Yet blue blood is very special indeed, and if you are true blue you are all right. But once in a blue moon you might curse a blue streak.

A **red** ribbon is second prize only, but red means love and life, and red is the color of Christmas and Valentine. Red means stop, and a red flag is danger. Still, we speak of red-letter days, here red means festivity and celebration. There are red herrings, and we paint the town red. Red is used for warning and for poison labels. We all know the meaning of a red cross. If you are in the red, you are not doing so well. Though you may not have a red cent, you may still see the world through rose-colored glasses, and that may put you back in the pink.

A **yellow** ribbon in competitions is the third prize; still a gold medal is always first. Yellow is the color of Easter and sunshine. But yellow means jealousy and also cowardice. There is yellow journalism, and to have a yellow streak is a serious defect.



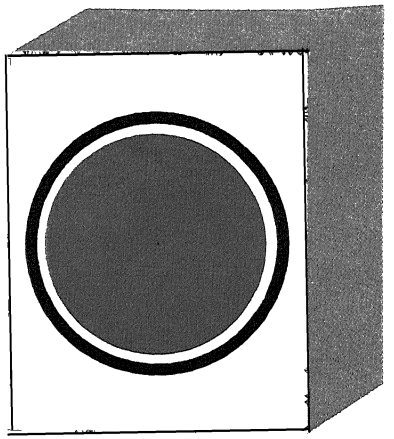
Green is envy. But green in traffic means go. Green also symbolizes nature and growing. Green is hope, the color of St. Patrick's Day and the Irish, but to look green means you are looking sick. Someone is green if he is inexperienced. Green smocks are worn by doctors in an operating room.

White means purity and joy; it is the color of brides and weddings. White is also the symbol of peace. A white flag means surrender, and a white lie is a polite excuse.

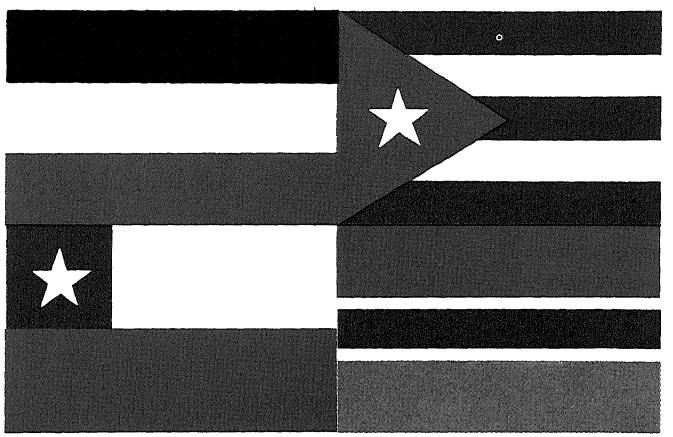
Black is mourning, despair, and death. There is a black sheep in every family; blackmailing and blackballing have bad meanings. Black is also the color of witches, and black art is something mysterious and evil. A black cat is bad luck. But to be "in the black" means to be doing well financially.

Beyond the above traditional associations, there are other ones which we acquire from experience. Meat is supposed to be red; lettuce and peas are green; in fact, we associate colors with certain foods. If these are changed arbitrarily, our appetite is seriously affected. We all have favorite colors.

Our buying habits are very much influenced by the colors of a package or product. Advertisements are designed to attract attention with color, and much consumer research has gone into determining the best-selling colors.



The colors of flags have strong traditional implications; as national symbols they are known everywhere. The symbolism of heraldic colors follows strict rules and served as identification especially in medieval times. Ships and sailboats use colored flags for signals. The ship-to-ship and ship-to-shore flag language, in which colors have specific meanings, is still in use despite electronic communications devices.



In our natural environment we associate blue with sky, space, and water. The ground is customarily darker than the sky or ceiling, and the reverse in a building is usually striking; we notice it at once because we expect the opposite. Beige means sand or beach, and green means grass and nature. Brown is associated with wood and earth, black with charcoal and night. Precious stones are valued for their colors as well as their cost; they also have special symbolic meanings related to their colors.

Color in building and in our environment can be used to enhance the architecture; it can make buildings, streets, and towns come alive. The colored accents of flower boxes or brightly painted doors and windows can cheer up the drabbest street. Paint and color can greatly alter for the better the visual impression of our urban environment.

Color was used lavishly in antiquity; the Greek temples were resplendent in the brighest hues. The Renaissance and baroque painters in Italy decorated with frescoes not only the inside but also the outside of important buildings. Many of the buildings along the Grand Canal in Venice were originally decorated lavishly.

Soot and grime from the air settle on the surface of buildings and change the color and appearance of the architecture. Metals especially change color; the striking green patina of an aged copper roof is often a welcome accent. Good architecture acquires dignity with age. Recently in some cities, especially in Paris, the cleaning of historic old buildings has restored them to their original appearance resulting in a change of the whole environment. The new glass-clad high-rise buildings require constant cleaning in an urban setting. Many now have completely mechanized cleaning apparatus built in so that the buildings can be kept clean and look clean, new, and new-looking at all times.

Color, above all, has been one of the prime means of creative expression. Throughout history all people have expressed their feelings with colors in paintings and in their environment. Photography, printing, and television reproduce color in different ways. The methods of color reproduction, especially photography and printing, have improved so greatly that we not only can re-create the environment realistically but often make it look more brilliant than it is. All man-made objects of our every day environment use color as a means of expression, and color is literally everywhere.

Color in the form of paint is still the simplest and most inexpensive way to change the man-made environment; but it is applied to the surface only and cannot change what is underneath. Color can change visual appearance of a building, but it cannot affect the structure or the plan.

Texture refers to the roughness or smoothness of a surface; these qualities determine its ability to absorb or reflect light. Texture also changes the appearance of color; for instance, a polished colored surface reflects light, and this greatly affects the colors we see.

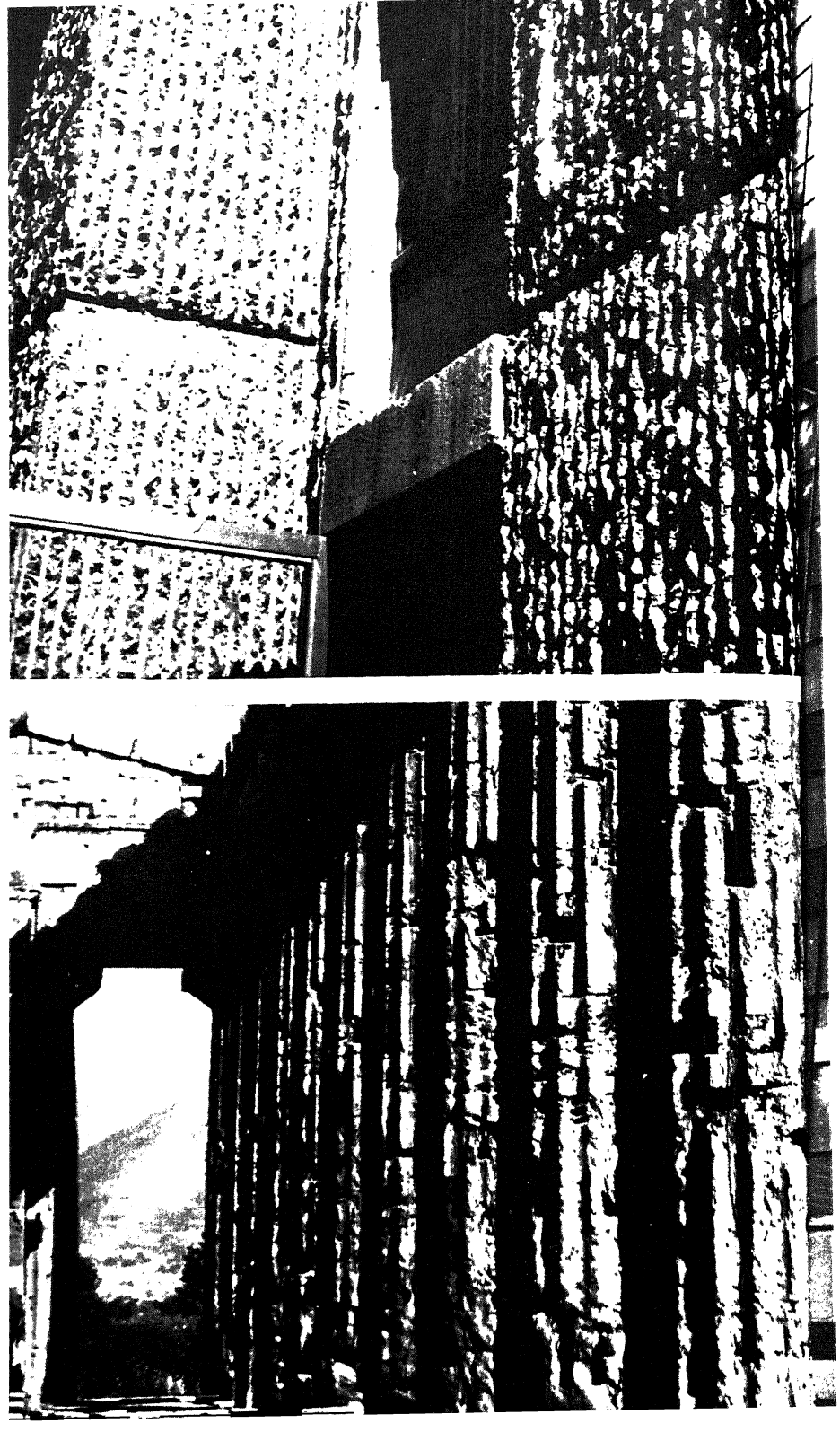
Glass, by its reflection and sparkle, adds life and movement to the urban scene. Walking through a sunny street with many glass-clad buildings can be an experience full of lively surprises. Windows catch the sky and multiply the surrounding buildings. The tinted heatproof glass often used today in tall buildings presents so many mirrors to the street which reproduce a constantly moving, restless image. Glass as a texture adds immeasurably to the visual life and gaiety of the city.

The texture of a building, especially a rough surface such as stone, concrete, or brick, is greatly changed by the angle of the light. Side lighting will enhance texture and accent buildings. A street will change completely from morning to afternoon, depending on the texture of the materials and the angle of the sun. The texture of the building materials and the depth of the window frames will make glass panes stand out and sparkle or recede and appear like dark holes, depending on the time of the day.

Summer and winter affect the angle of the light on buildings, and this changes the appearance of their texture. The white reflection of snow suddenly throws light into the street from a new direction, and this often changes the way the whole environment looks.

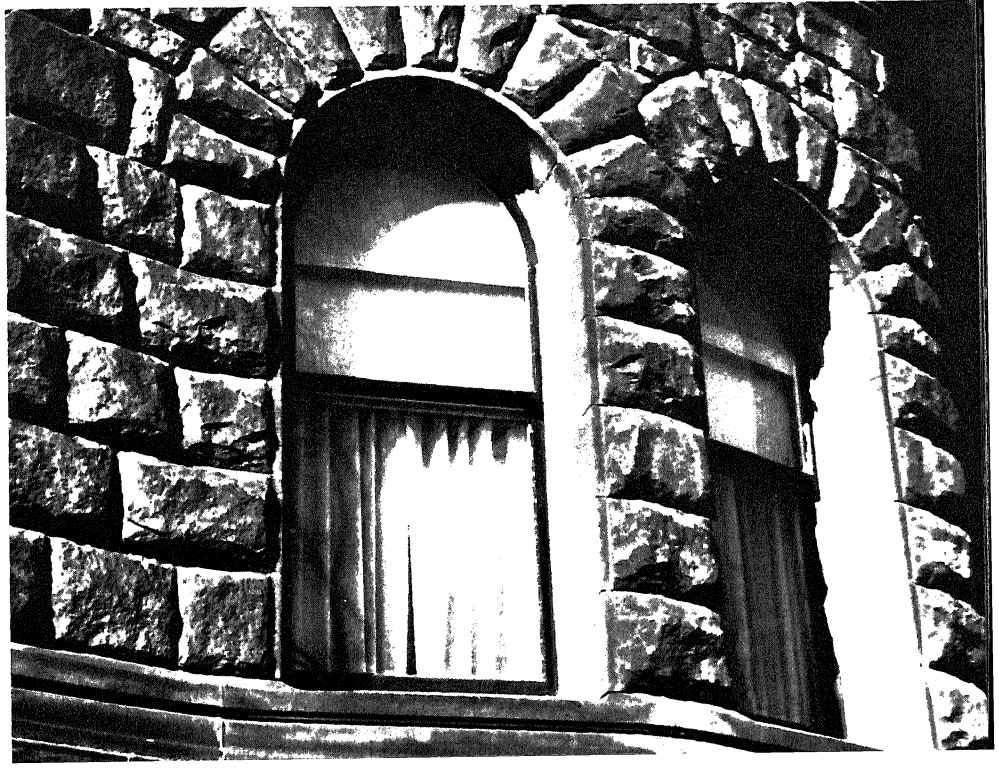
The weather is an important factor; a dull day or fog make the urban environment fade out; shadows, textures, and color disappear. Buildings recede into a gray distance; a skyscraper vanishing into the fog is an eerie sight. Architecture becomes soft and dissolves; contours and surfaces blur and take on the quality of a fuzzy blanket.

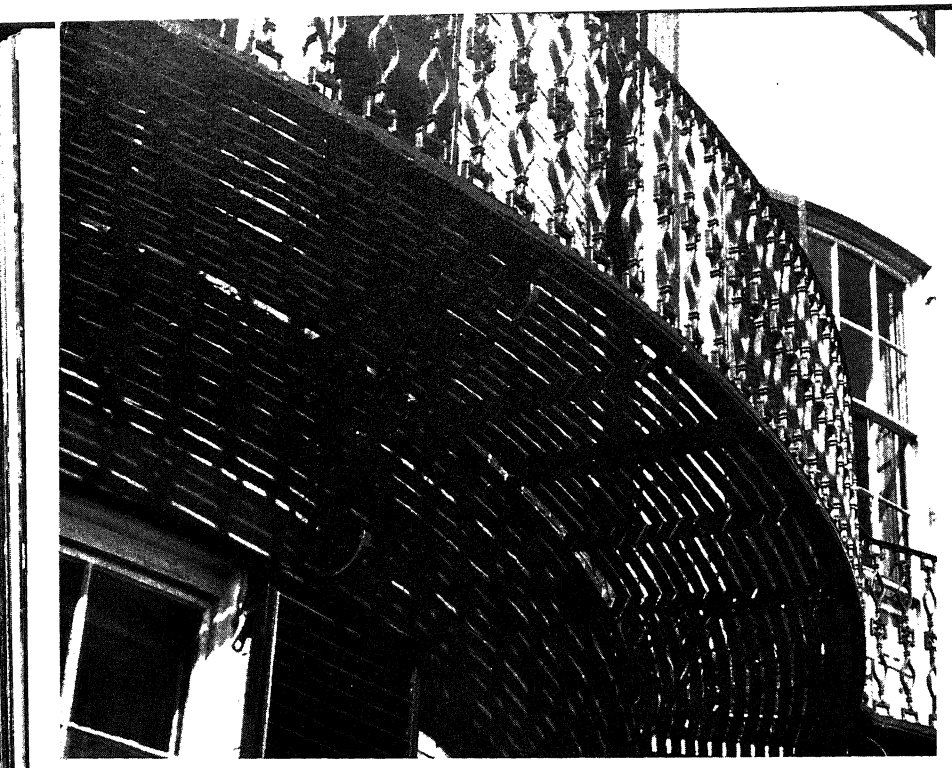
Rain changes the textures once more. A wet surface takes on entirely new characteristics. Color contrasts are deepened: reflection is added. Dull surfaces look as if polished, shiny and new. (See also "Light and Shadow.")

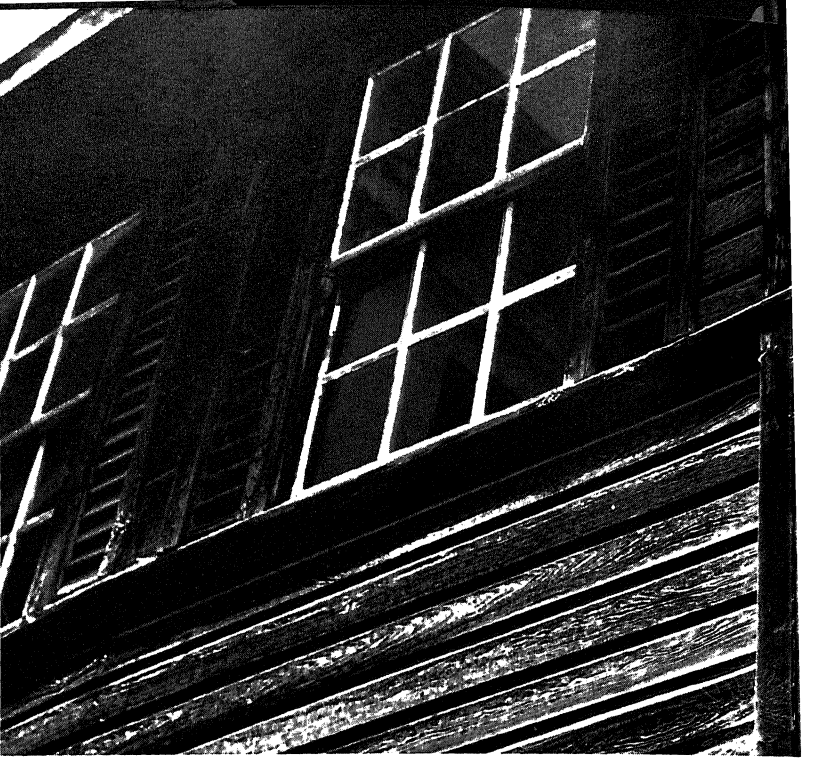


The texture of stone and concrete

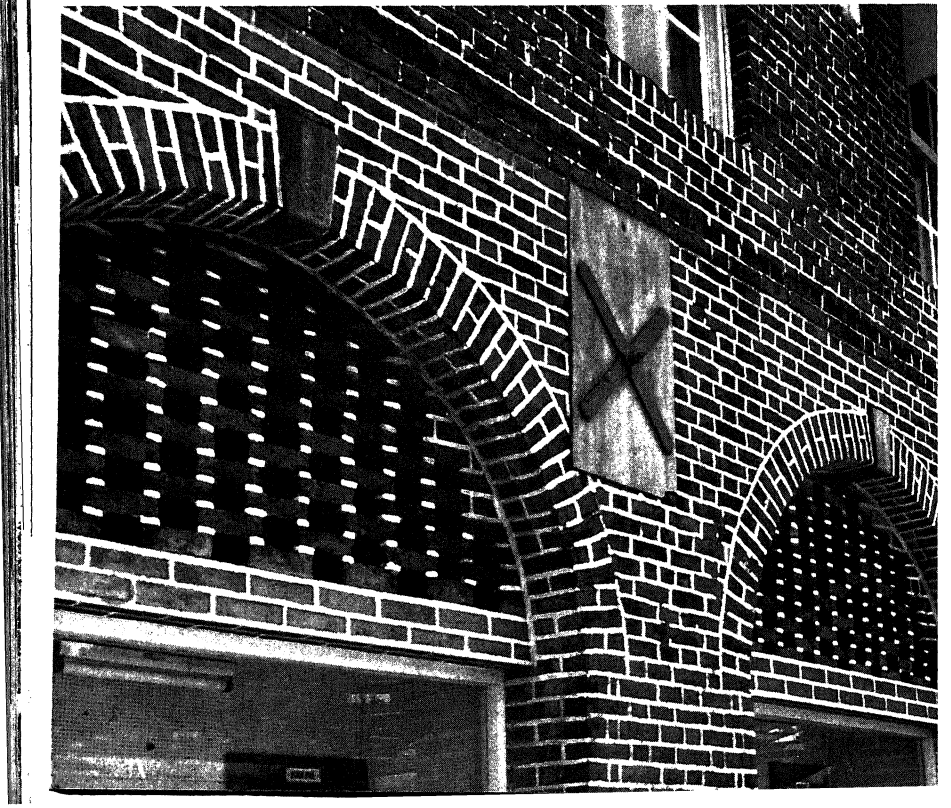
The texture of glass and window openings

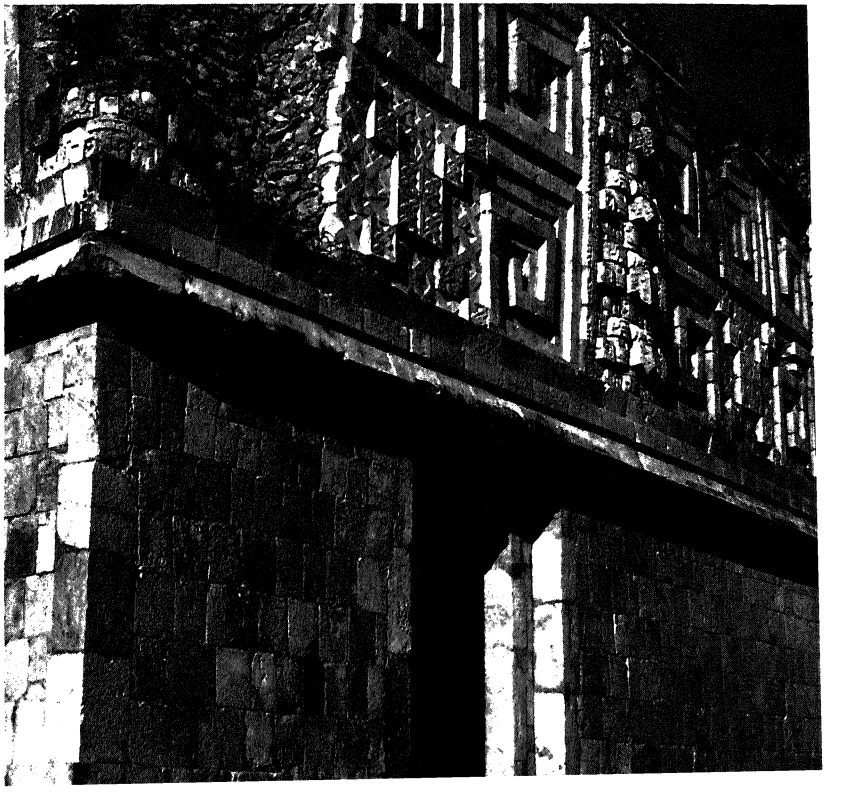


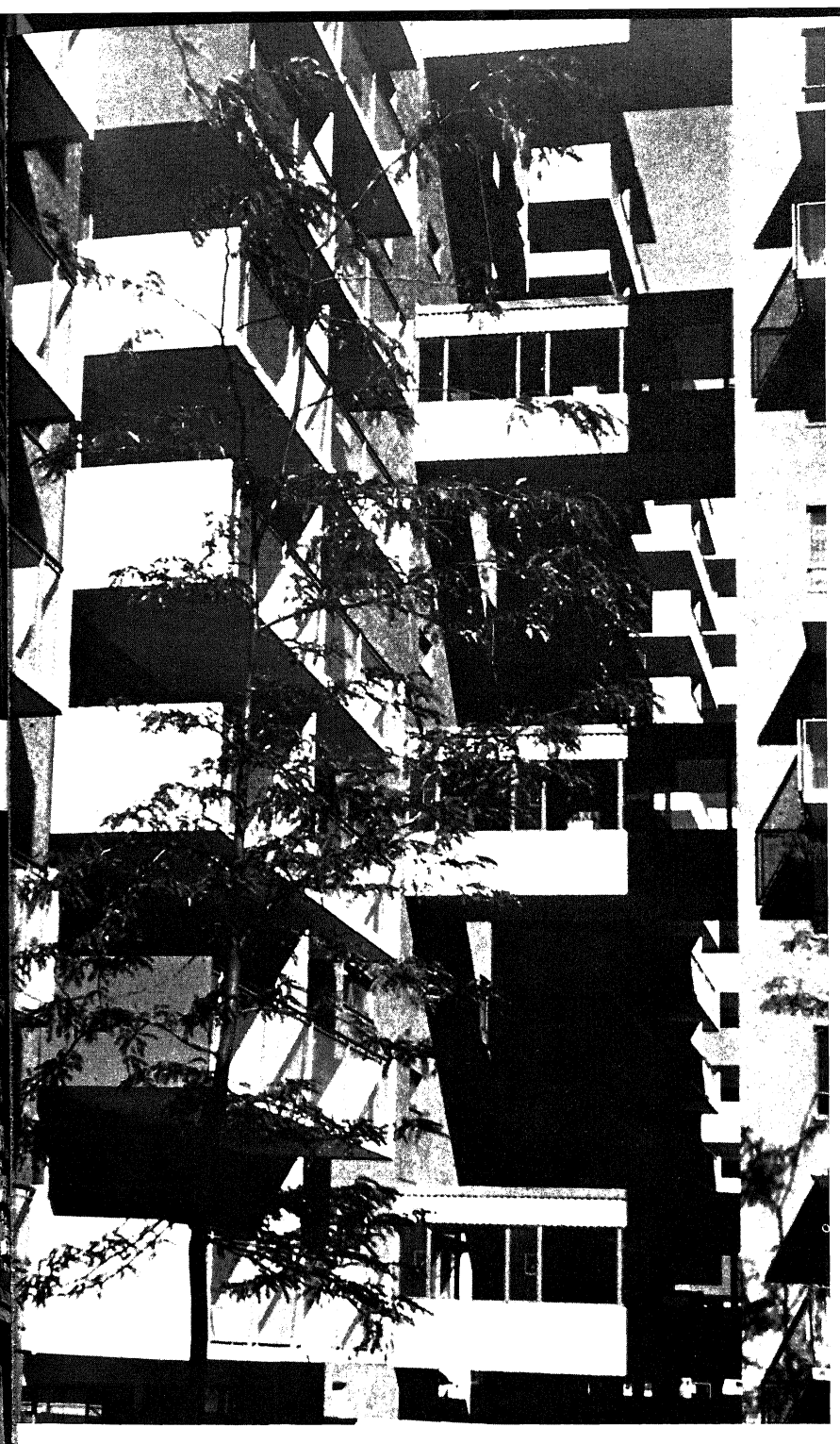




The texture of building materials: brick, stone, wood, and wrought iron

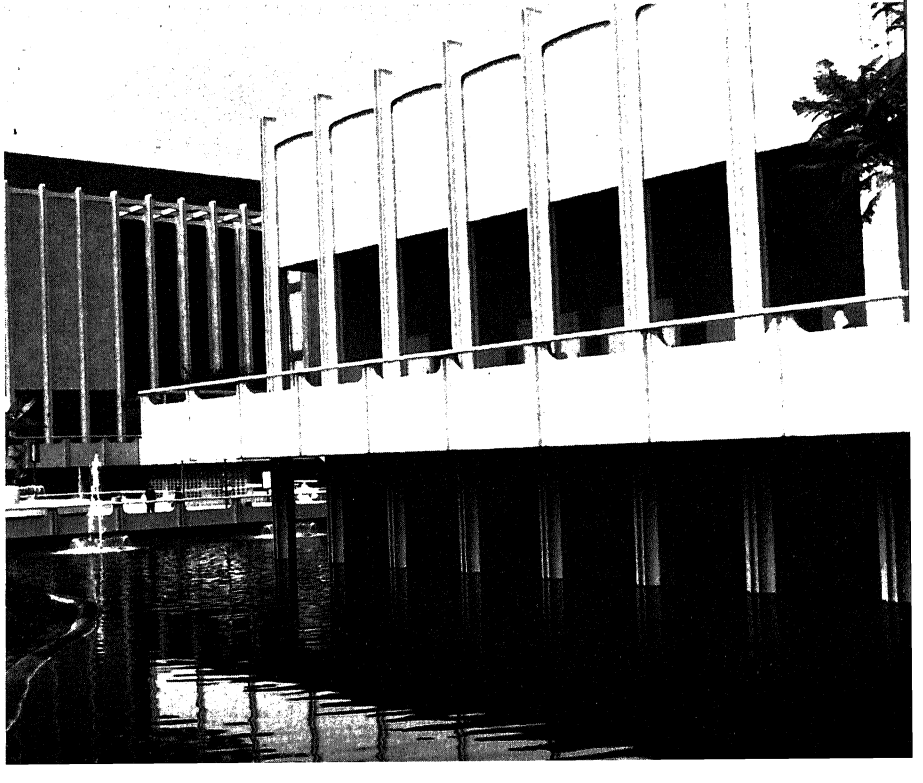




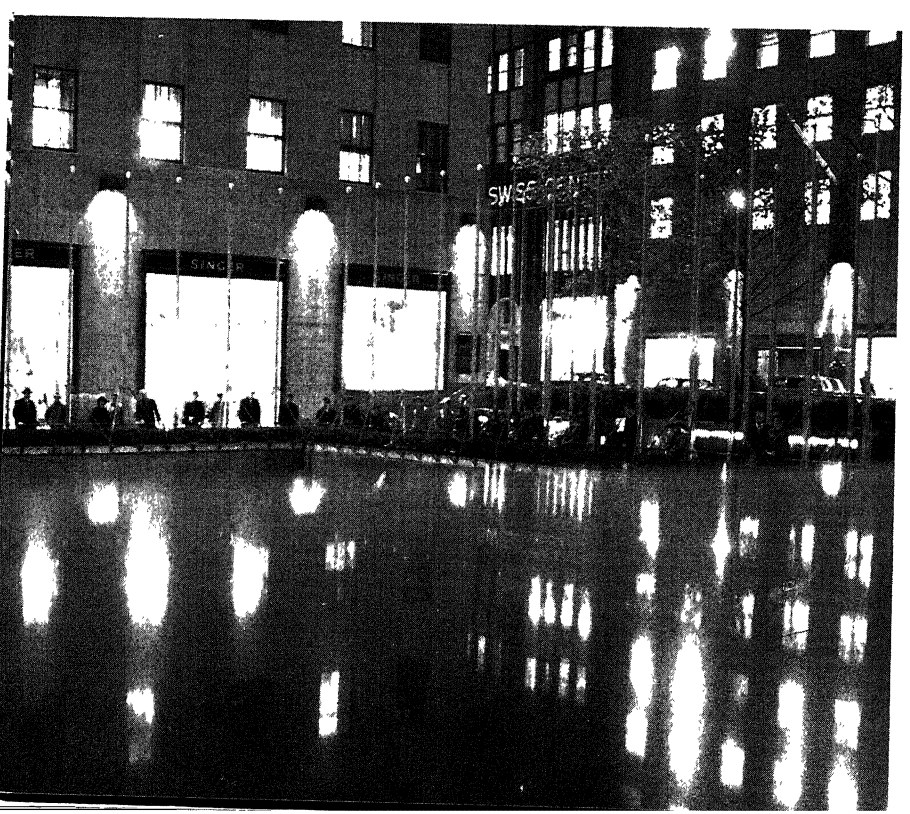


The texture of balconies

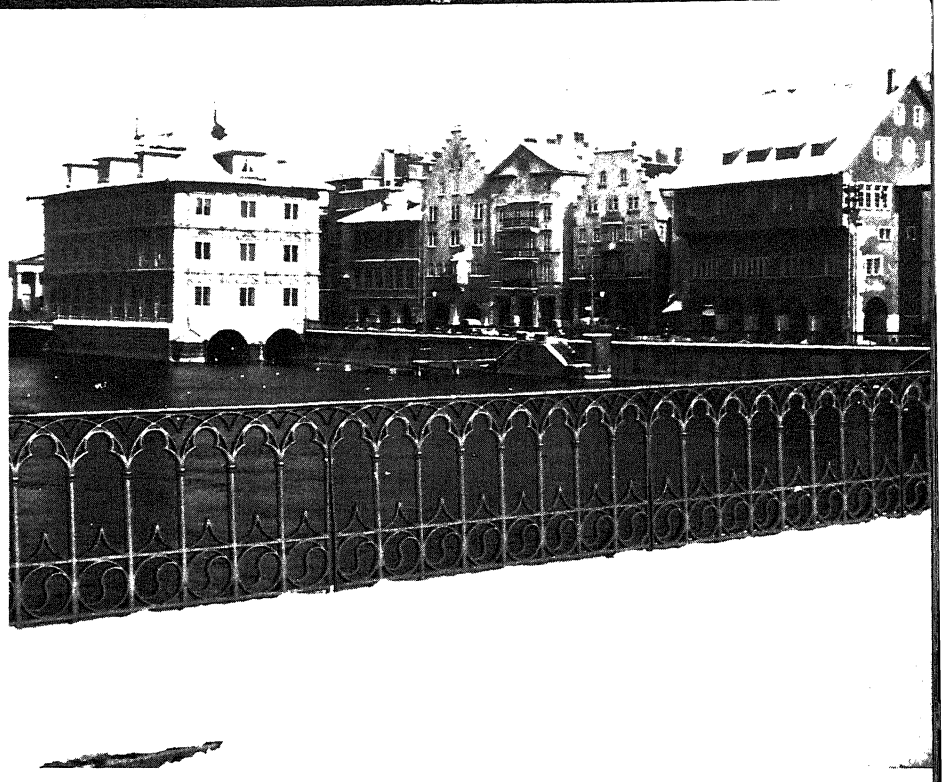
The reflective quality of rain and water



The texture of polished granite and of sunshades



The texture of design and pattern



Snow enhances contrast; fog and haze blur contours

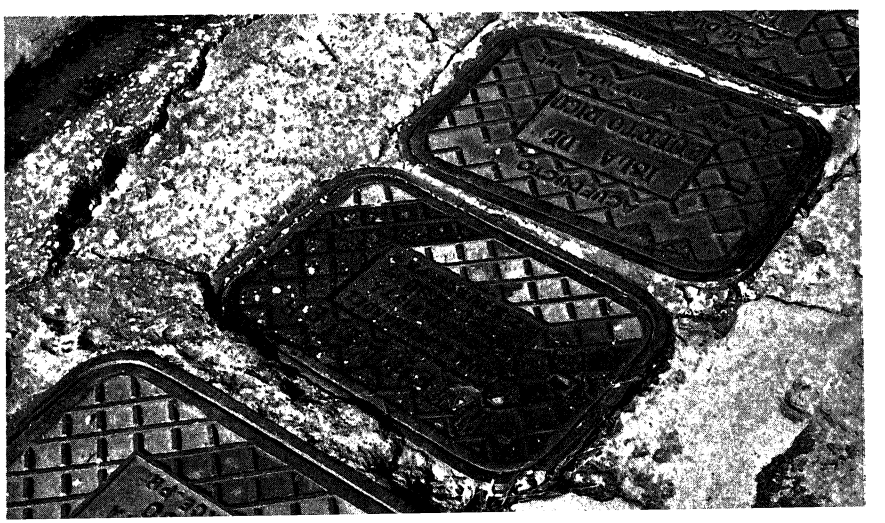
The texture of the ground or pavement influences the way we move; children skip from stone to stone, and we all try to avoid cracks. Center strips on highways are often rough-textured, to make them highly visible in rain or artificial light. Sometimes bumps or rough paving are put into roads to make drivers proceed slowly. Distinctive patterns in sidewalks or on the pavement will cause us to walk in certain ways. Cobblestones, brick pavement, or other highly textured materials give a special quality to an urban area or square. We are more conscious of the ground than of the rest of our surroundings because we look where we walk and because the texture of the ground influences the speed with which we move.

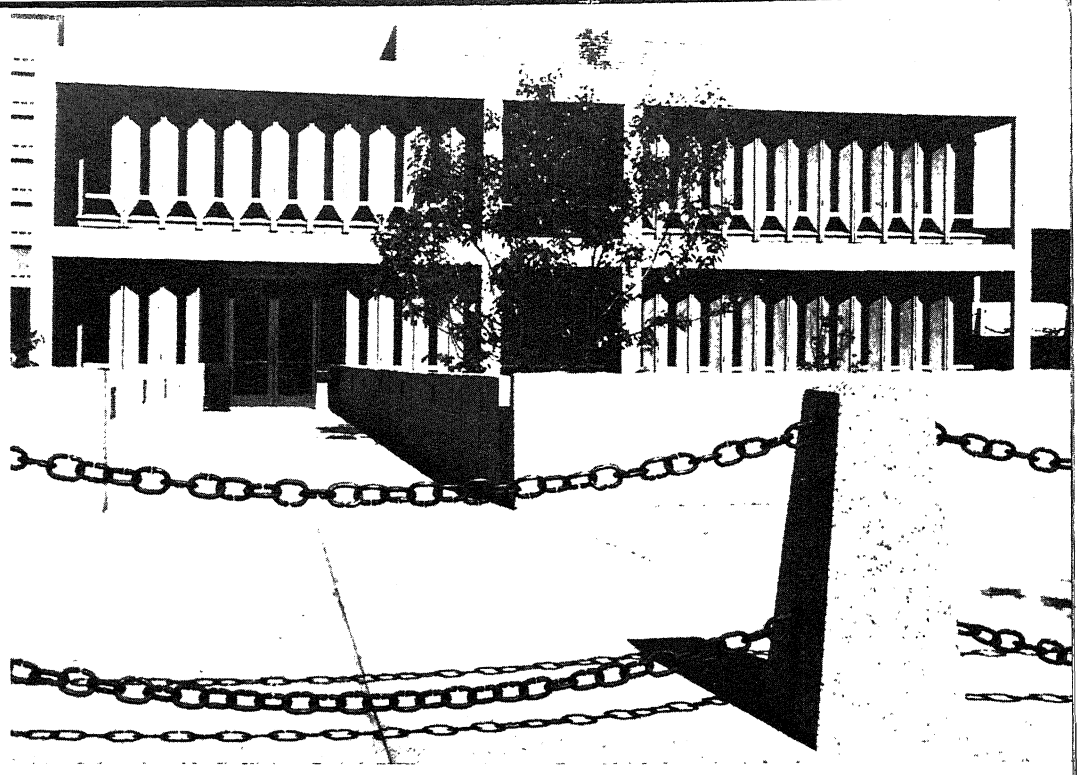
Grass areas and special ground covers such as ivy, pachysandra, or myrtle add a special texture or quality to the grounds. Grass invites walking while other deeper ground covers spell "keep out." The climate of course determines what can be grown and its year-round appearance. But the landscaping of an area is important not only to its appearance but also to the area's success in terms of use. Pocket-size parks, courts, and rest areas with benches, especially in the city, very much depend for their appearance and use on the interest, durability, and textures of the materials and the planting.

In fact, the quality and appearance of an urban area can be changed completely by adding greenery and planting, by changing the texture of the grounds. Highway departments have added green to the concrete pavement of the strips between roadways where grass would not grow; this softens greatly their stark and hard look.

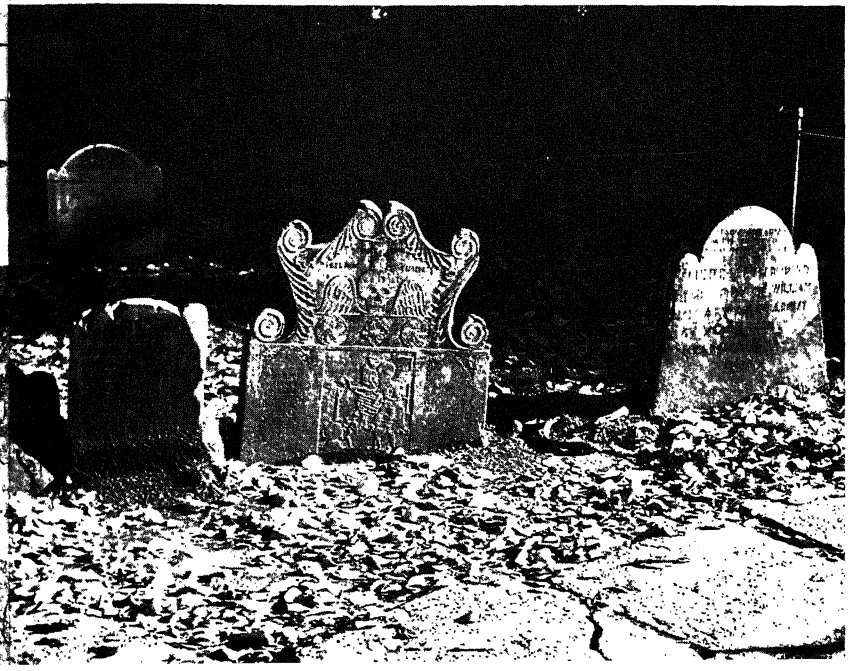
Flower beds, shrubs, and trees of course add immensely to the urban landscape and the whole environment. The setting of a building or an urban area in terms of color and texture, that is, planting, design, and treatment of the grounds, is really part of the architecture. The building and its setting must be conceived as a whole, because they are used and seen that way.

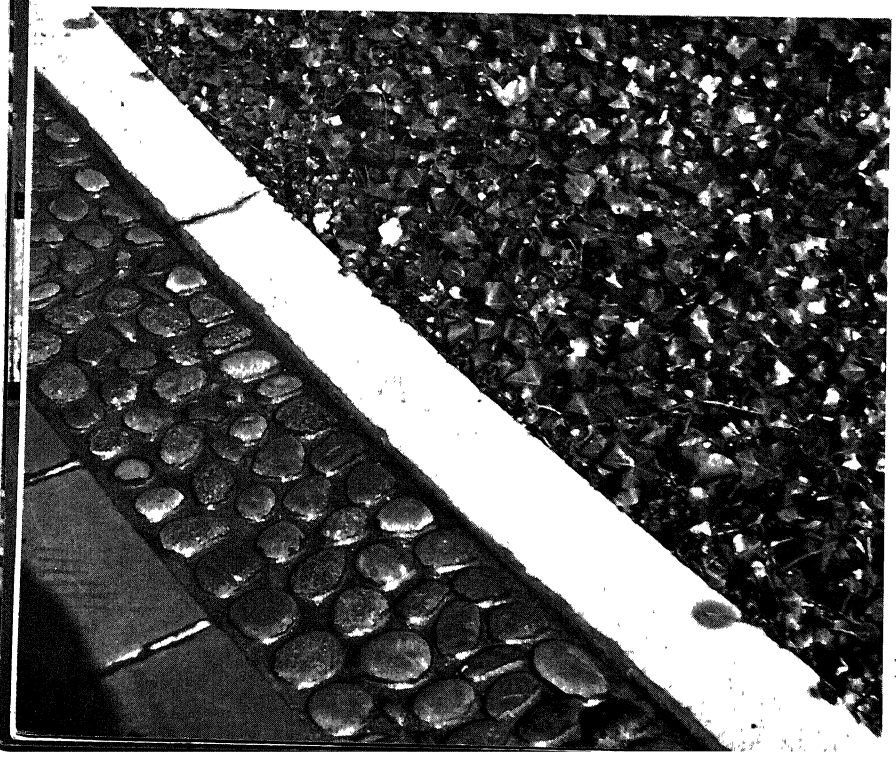
Texture influences greatly how we react to our environment; texture can be interesting and inviting, or it can be austere and forbidding. Color and texture are the qualities that first acquaint us with the urban environment. If this first impression is favorable and pleasing, then we are tempted to look further and explore.

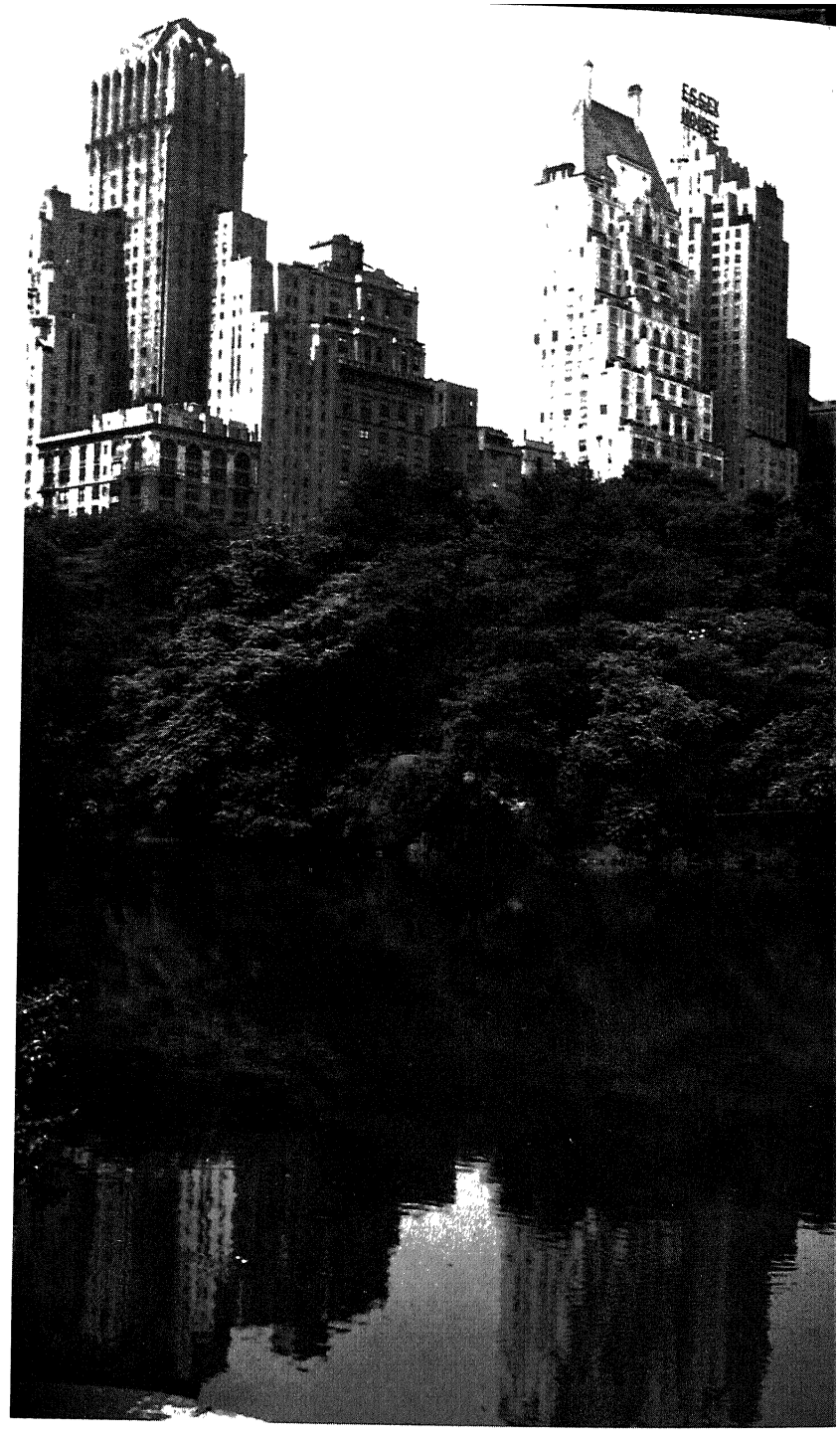




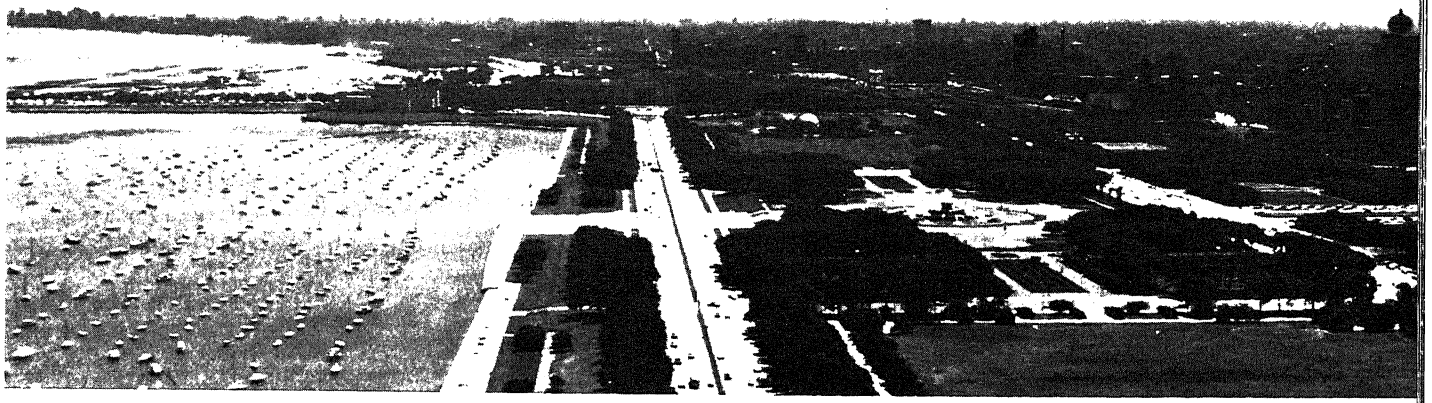
The texture of the ground and fences







The texture of greenery and planting



The landscaping of the building is part of the whole

Form and Movement

Urban form describes the shape and the physical characteristics of the whole city. Movement is circulation between its different parts, and also between cities. In our world it mainly refers to traffic and transportation, a ubiquitous and most abrasive urban concern all over the world. Form and movement are static and dynamic qualities of the man-made environment.

Movement of goods and people is one of the basic economic needs and reasons for cities. Against this need for mobility stands the inherited form of the city. The world-wide traffic problem is a result of the clash between modern transportation technology and the traditional concept of cities, because most cities developed long before our modern means of transportation were invented. Traffic congestion jeopardizes the very existence of cities and the future of urban development.

The present transportation struggle is concerned with integrating the need for more and faster movement with the living habits of people expressed in traditional urban form. Modern technoloy has changed and is continuously changing our environment and with it our cities, but the transportation technology has affected our personal lives. It is a matter of values and priorities: Is transportation intended to serve us or has it become an end in itself?

When we talk of traffic and transportation, most of us think of highways and cars, because cars are ever present in cities and without them urban life as we have come to know it could not function. It is the highways and streets which pump the economic lifeblood through a city. But, unlike our human arteries, those of the cities are mainly out in the open for all to see and use. At night especially, from a plane or high building, they are the most visible feature of the man-made environment.

Expressways often ruthlessly cut through the urban fabric in the name of economic necessity with little consideration of what they destroy or any human values. In turn, this has resulted in blind resistance by some people who simply blame cars for all traffic problems and refuse to see that cars are wanted by a large majority of people.

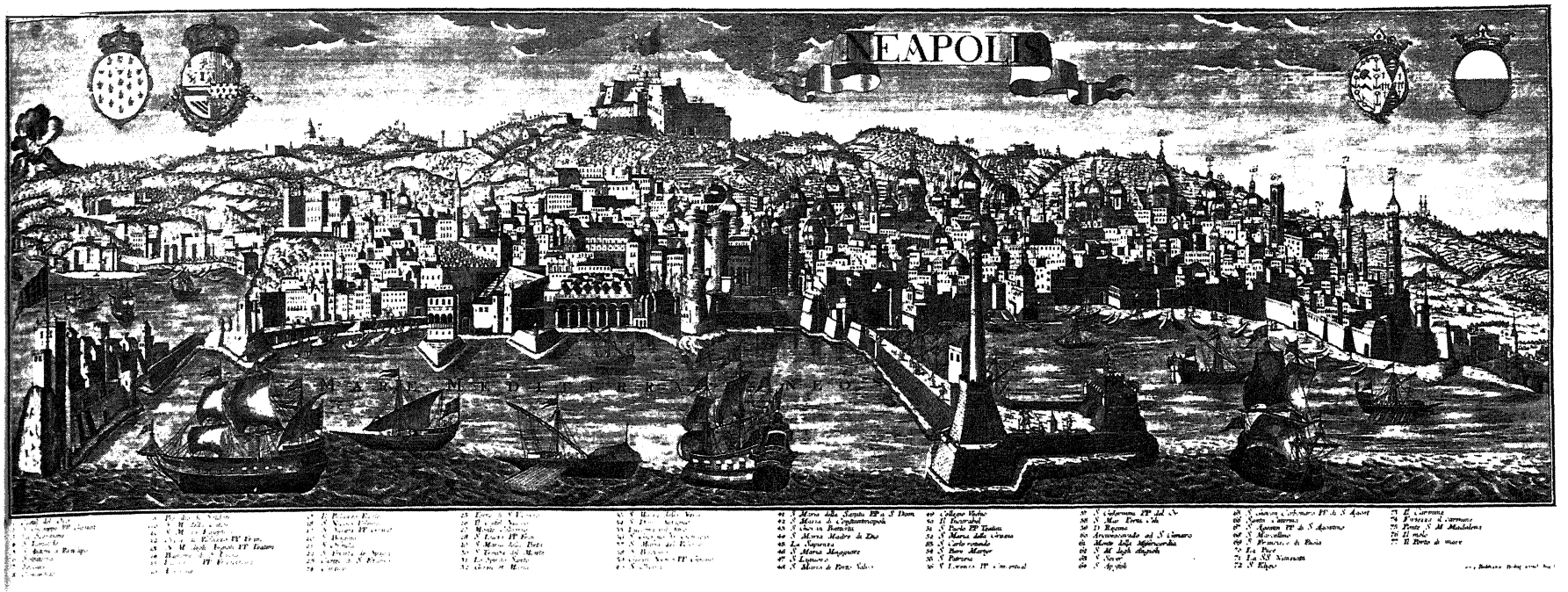
Whatever one's views for or against cars, trucks, and highways, there is no doubt that both are here to stay. In the absence of an equally flexible alternative in the urban environment, better transportation here and now chiefly means cars, trucks, and highways. The number of cars has been growing eight times faster than the number of people in the United States in the past twenty years. This in turn has enabled people to live dispersed over ever larger metropolitan areas and has led to unplanned urban sprawl.

Movement and form in future must be integrated. Traffic and towns not only depend on one another but indeed must be planned simultaneously. That this will result in quite a new city form and concept is clear if we look at some of the urban design proposals for new towns as well as redesigns of existing ones.

It is also evident that the integration of form and movement cannot be achieved without over-all, regional planning: simply because of its magnitude, the problem of integration of transportation (mainly expressways) into cities cannot be solved piecemeal or on a local basis.

Historically, city form was determined by one overriding need: defense. The circular city pattern was the answer to this need. Since antiquity some cities and the life of the citizens were organized entirely for war. Elaborate fortifications surrounded most medieval European towns. In turn, the city lords, with their fortifications, were able to dominate the surrounding countryside. (See also "The Function of Cities.")

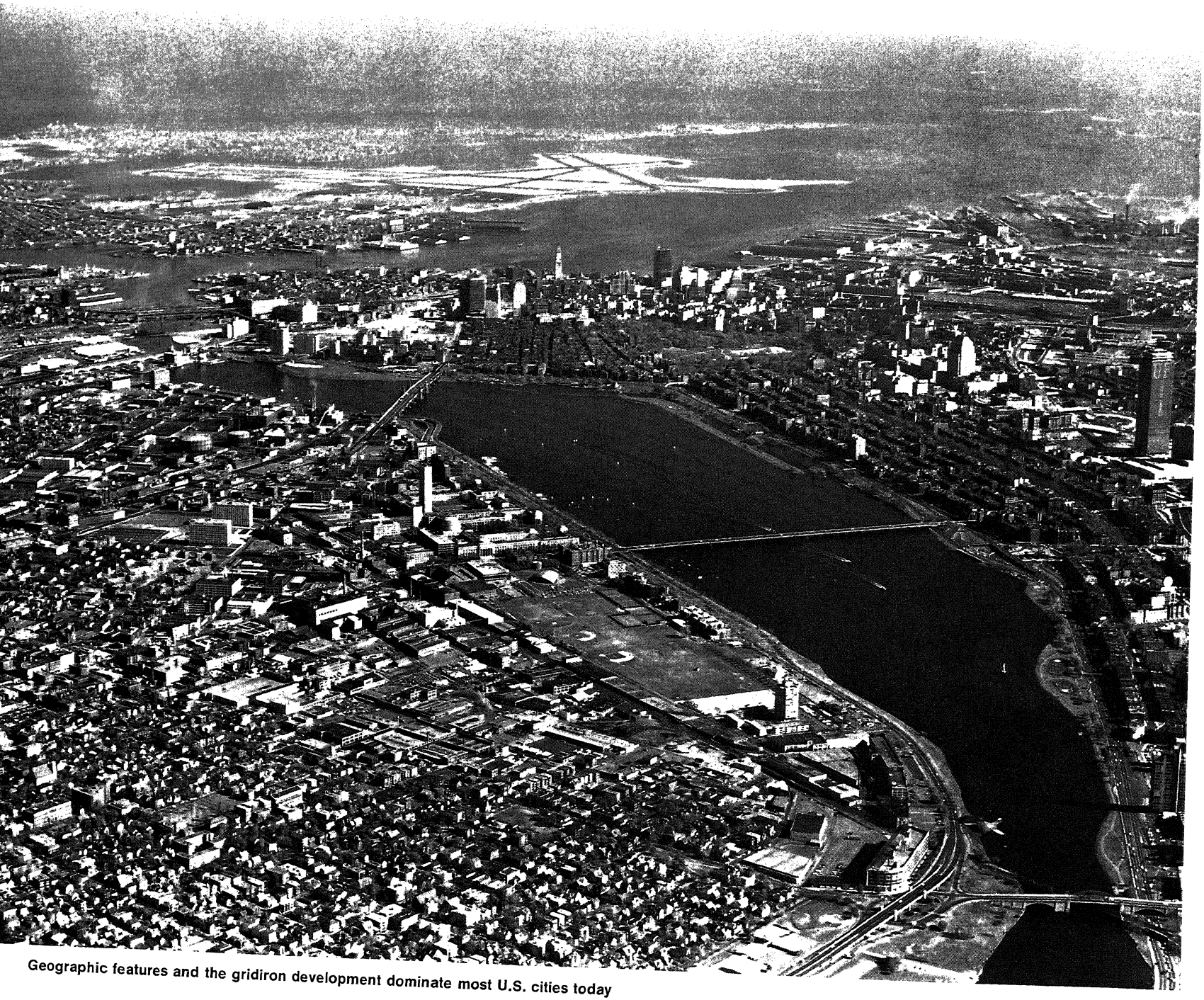
Transportation and trade were the other important historic factors in the location and shape of a city. Rivers, harbors, and trade route intersections determined the origin of most cities. Georgraphical features, together with movement (transportation), continue to dominate urban form.



Historically city form was determined by defense

Geography dominates city form

Relentless repetition



Geographic features and the gridiron development dominate most U.S. cities today

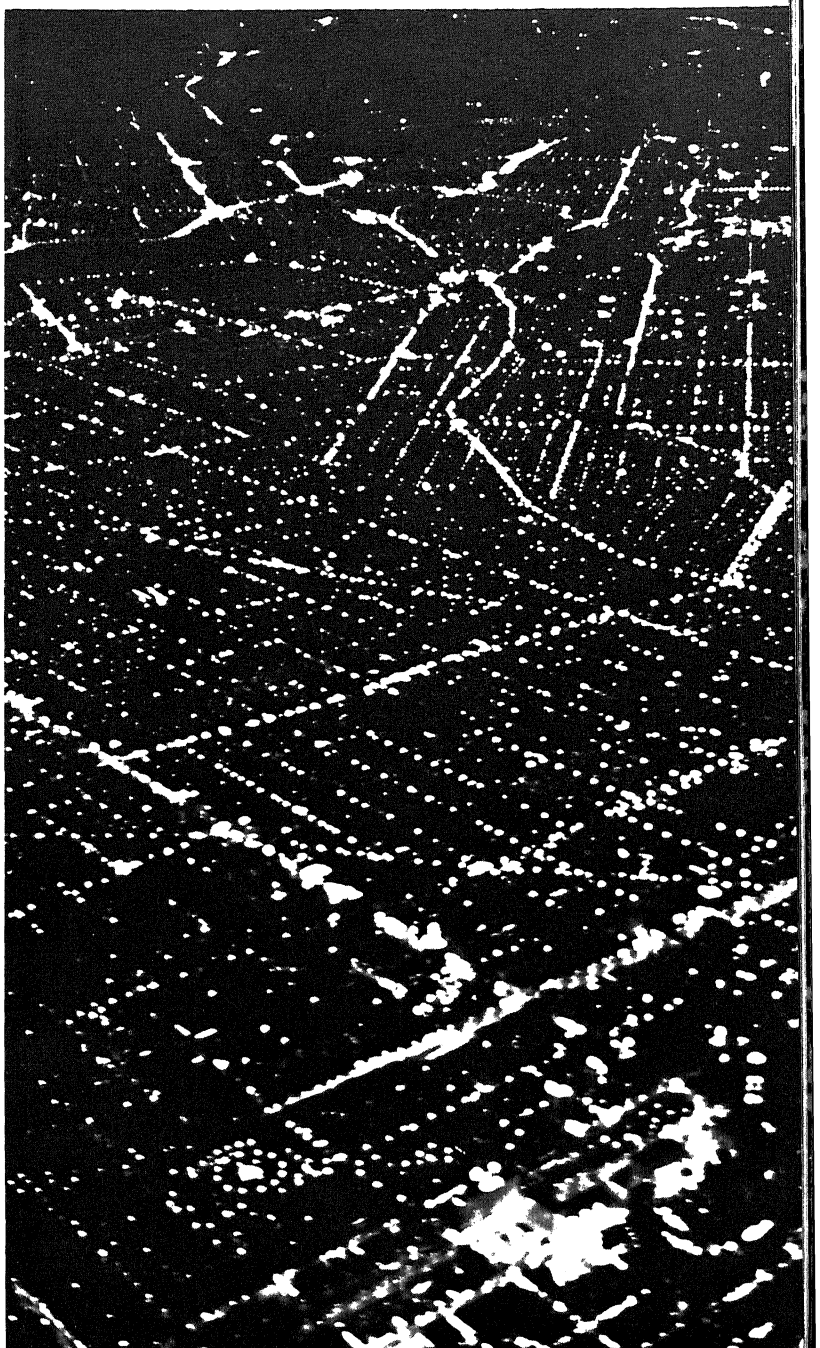
The gridiron pattern along which most U. S. cities developed is the most economical for private development and does not require an over-all plan. The relentless repetition of uniform square blocks is the dominating feature of most of our cities.

Public transportation and finally the private car have completely changed the form of cities. To the elevator and modern building technology added the vertical dimension. Finally, air transportation and electronic communcation have shattered all previous notions of city form. In future, cities can be built almost anywhere we choose, and from a technical point of view their form is limited only by our imagination.

Today in the U. S. city, form depends on many individual decisions. In turn, these decisions are determined by our values, by what is most important to us. Should these decisions be based only on economic factors as at present, or do we hold that human and visual values must play a part? Each one of us shares the responsibility for the answer.

In the absence of an organized plan, building development is not coordinated; urban form becomes an expression of thousands of conflicting decisions that often spell chaos for our environment. The absence of planning, urban design, or any rational priority system has resulted in the urban sprawl on the outskirts of every city and is creating a new kind of slum. Commercial development follows every highway—that is, the highway location determines future urban development and form.

We need form in our lives, and we need form for our cities. A strong form provides a center for orientation or visual leadership. Without planning, the urban environment becomes an expression of wild competition. Every highway on the outskirts of cities is a witness to this. Without a visual focus, urban development becomes shapeless, monotonous, and utterly dull. The seemingly endless repetition of the same little suburban houses over acres and acres demonstrates our lack of imagination and our lack of understanding of urban community and form.



Gridiron patterns

Without any visual focus urban development becomes utterly dull

Commercial development follows every road

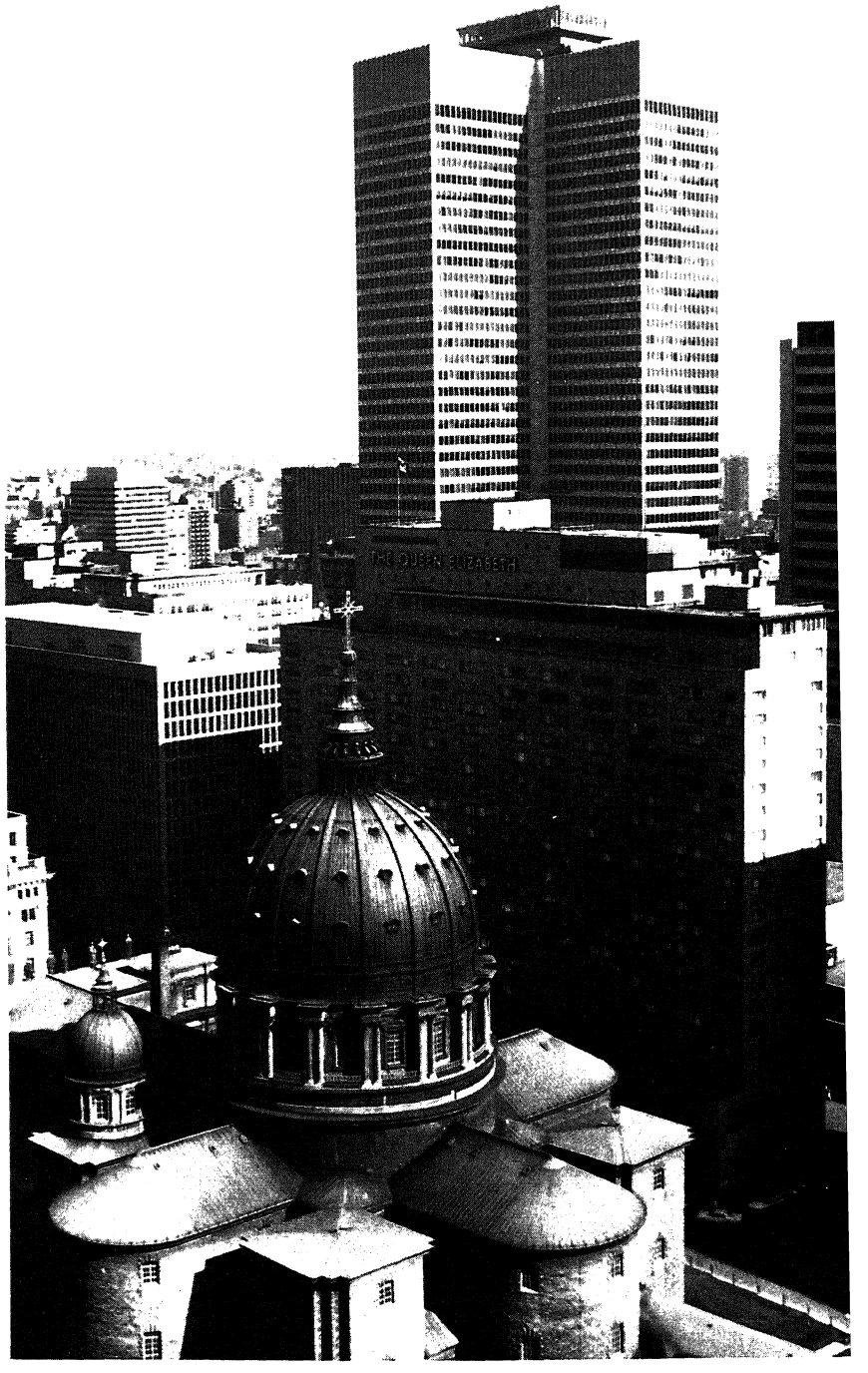
In old European cities the cathedrals provided a focus. They dominated the town visually as well as its cultural life. Later palaces occupied a central position. Now institutions or large office buildings may provide visual leadership as expression of their economic and intellectual domination of the present-day urban environment.

Form needs balance and proportion, not only within one building but between buildings and within the whole urban environment. The form of a new building must be related to its surroundings, to the context and fabric of the town. If a new building, no matter how interesting and exciting its architecture, does not fit in, it will disturb the whole.

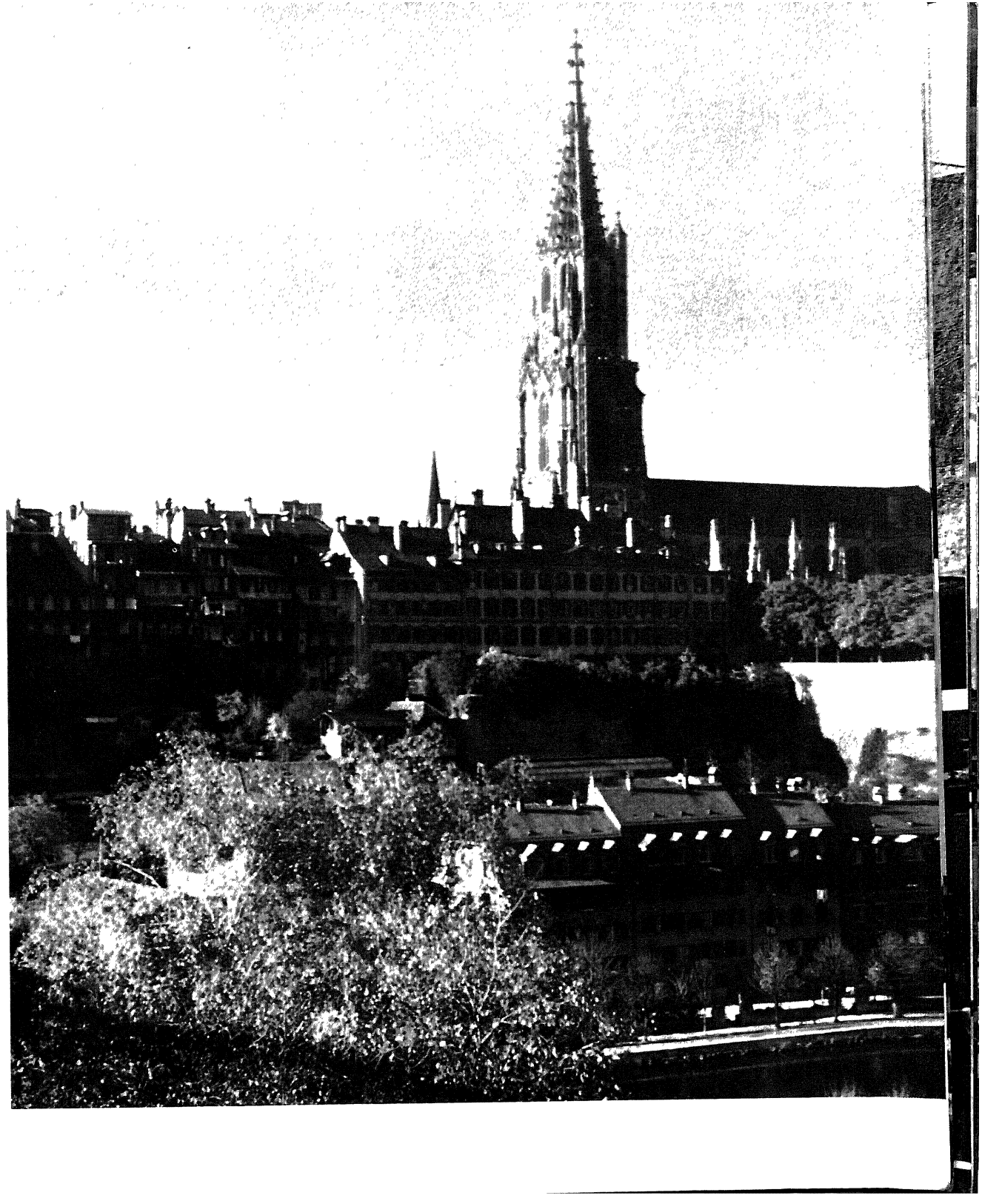
Urban design must be an integral part of city planning because the economic, social, and visual qualities of the urban environment are part of a whole. The success, indeed the life, of a city depends on movement, on circulation, traffic, and mobility of every kind.

To understand and perceive urban form we must first remember that it is three-dimensional. Therefore it cannot be experienced from a single point of view. Form can only be understood by adding the dynamic quality of movement, that is, by seeing the form from all sides. A building or a city also must be observed close up as well as from a distance, from high up as well as from the ground. The form of a building will never be revealed fully unless we also know the interior of the building, because it is the function or purpose of a building that creates its exterior form. (See also "Order and Unity.")

In the same way, we cannot understand a city if we merely drive through its center or see it from the air, though the air view helps very much to gain visual orientation. A city must be seen by walking through its streets—especially historic cities, which were designed for people on foot. There are some cities or areas within cities that are best seen from a moving car, but the view at 40 miles per hour is very different from what pedestrians observe.



Sometimes office buildings provide a visual focus



In old European cities cathedrals often dominate the town

The highways that now slice through many American cities usually show the driver the very worst side of the town. Only now after so many city expressways have been built is the driver's view being considered, yet most of us spend hours in a car every week.

The view from the car is not only important, but it is a relatively new view of the city and our urban environment. The driver needs strong accents, bold forms for orientation, and well-spaced landmarks; he should not have to look for details or look away from the road. He should be able to "read" the environment without strain.

Walking, we get quite a different view; we don't need strong accents, but variety. We can stop and observe interesting details and decorations or sit down and rest in an inviting spot. As pedestrians, we observe the intimate life of cities, and we have contact with the people in the street.

Therefore, if high-speed mobility is successfully integrated into urban form, cities will have to express themselves in two ways: one, of strong accents and bold landmarks, the distant view to be seen from a fast-moving car, bus, or train; the other, of diversity and detail that only reveal themselves to the stroller walking along.

In turn, if we want to see cities or buildings, we have to observe them from both the driver's and the pedestrian's points of view; their quality and visual interest must be judged both ways. In future, cities must be planned and designed to accommodate both. By the separation of traffic from people, we have made a beginning towards achieving these two kinds of form.

At present many new shopping centers are planned entirely for pedestrian use, with large parking lots around them. Merchandise and supplies are brought in underground; servicing of the stores does not interfere with shopping.

Reston, Virginia, the first completely planned and designed postwar town in the United States, has a town center for pedestrians on the shore of a lake. The rebuilt city- and business-center of Hartford, Connecticut, is reserved for people on foot; cars are parked outside, and traffic either circles the center or passes underneath. For a long time Chicago has had two levels of car and truck circulation, and this is further expanded in the new Chicago plan. The subway systems that exist in major cities all over the world demonstrate the principle of separation of different kinds of movement.

More far-reaching separation of pedestrians from vehicles and in turn of different kinds of traffic (people and goods, cars and trucks, public and private) is an important idea that has been much discussed. Unfortunately it has not often been put into practice or not on a large enough scale.

Transportation has shaped our present cities and is continually changing their form. Rapid transit systems, subways, expressways and their interchanges are very much here to stay. New transportation methods will be added and in turn influence city form, because constant technological changes must be accommodated in a modern city.

Highways don't need to destroy the social and physical fabric of cities as they so often do today. Careful, coordinated planning and visual design studies and experiments are constructive ways to create a new integrated city-and-transportation form without disrupting communities. Integration into the existing fabric is especially important since expressways take so much urban land and have become such highly visible parts of the city. All new cities recently designed have been planned around transportation (mainly expressways).

The city as transportation center

Public mass transportation has been neglected in most U. S. cities. The visual results are countless unsightly parking lots in the city and uncontrolled, ugly urban sprawl in the suburbs. Coordinated transportation, that is, coordination of public and private and of car, bus, rail, and air transportation, is something that is still entirely missing from the urban environment.

It is hoped that by better planning on a regional basis much of the conflicting urban and transportation legislation that is the result of many conflicting values will be coordinated. Only the interests of the voiceless consumer have so far been neglected or ignored.

Public transportation systems and commuter services in most cities are privately owned, yet frequently government-regulated. Because of increasingly dispersed living and commuting patterns, too few people are using public transportation to make it a profitable enterprise. As a result, service is getting poorer. Often transit has to be subsidized to be continued at all. Still, the myth remains that transit should make a profit on its own while state and federal governments build and maintain all highway systems, and public funds have created every airport in the land.

There are cities that are building new rapid transit systems as a result of public decisions. Montreal's recently opened metro can serve as a model in every way. It was created to achieve a better and more viable city by persuading people to use the metro instead of cars, by providing not only efficient public transportation but also handsome facilities and a pleasant environment.

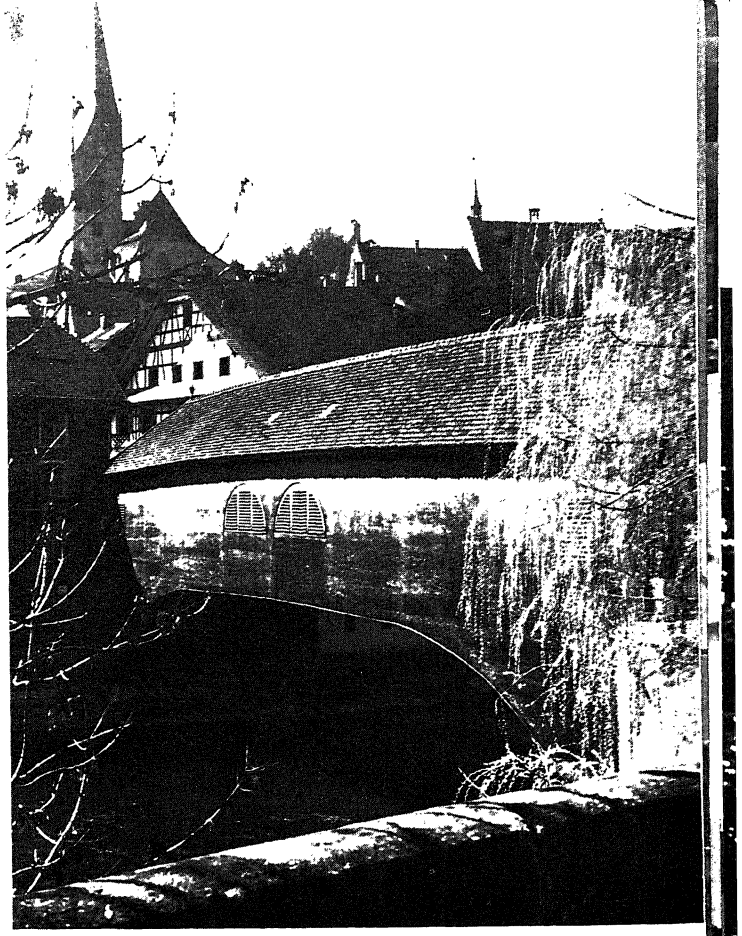
Rapid urbanization has vastly increased the transportation problem. The economic welfare of metropolitan cities and the personal welfare of their inhabitants depend on urban transportation, which in turn is keyed into a regional and national pattern. That public transportation decisions should not be made on the basis of providing profit for privately owned companies is clear; yet this is what often happens on the local scene. Better rapid transit is the one answer to increased mobility in cities, especially where density is increasing, and in future this will be in every metropolis.

Better transportation depends on public funds and taxes: highway as well as subway and rapid transit construction depend on political decisions and on the public's vote. This vote depends on our values; on the importance we attach to the human and visual qualities of our environment, indeed the quality of our lives.

One thing is clear and should be remembered: movement, that is, transportation, affects all our urban lives. Urban development and circulation are now quite dependent on each other. Movement determines urban form, the environment in which we live; as the means of transportation change, so will urban form.

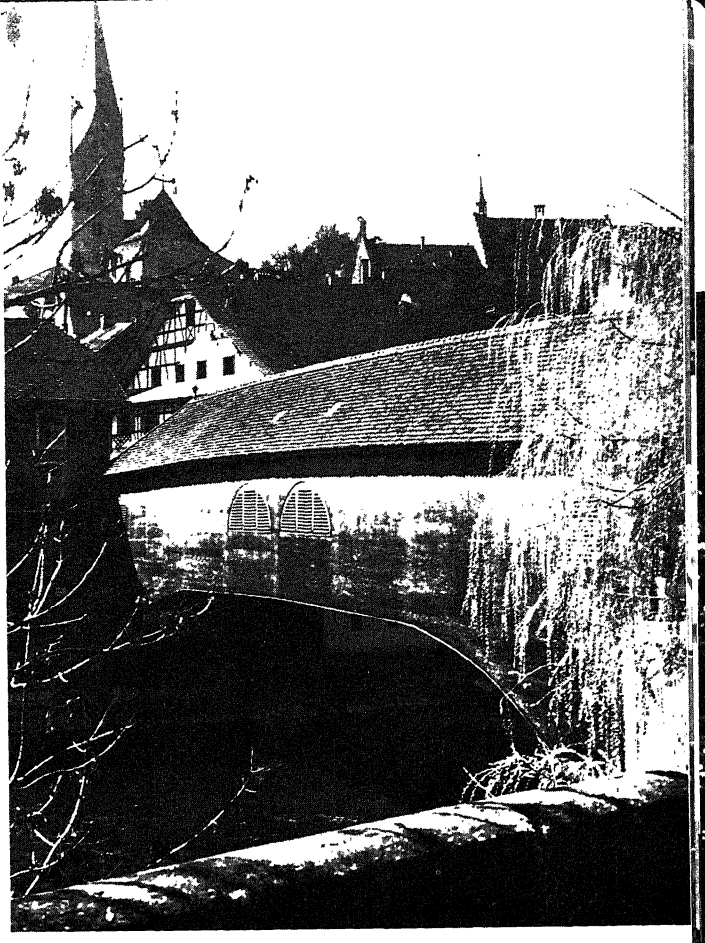

DISNEYLAND-ALWEG MONORAIL SYSTEM

The view from above helps to gain orientation



The pedestrian view of the intimate life of cities

The view from above helps to gain orientation



The pedestrian view of the intimate life of cities

The view from a moving car needs strong accents and bold landmarks

The close-up view of diversity and detail

The shopping mall reserved for people

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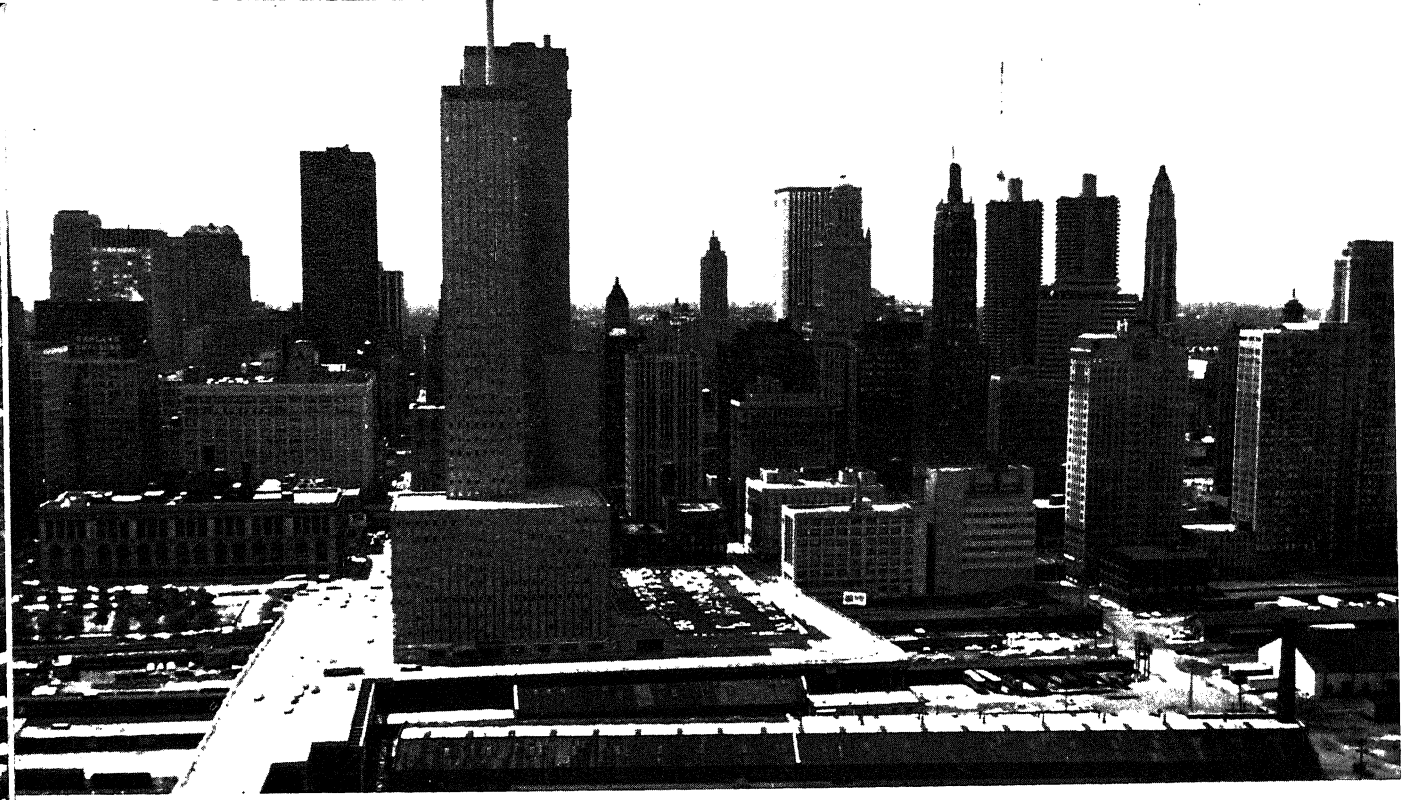
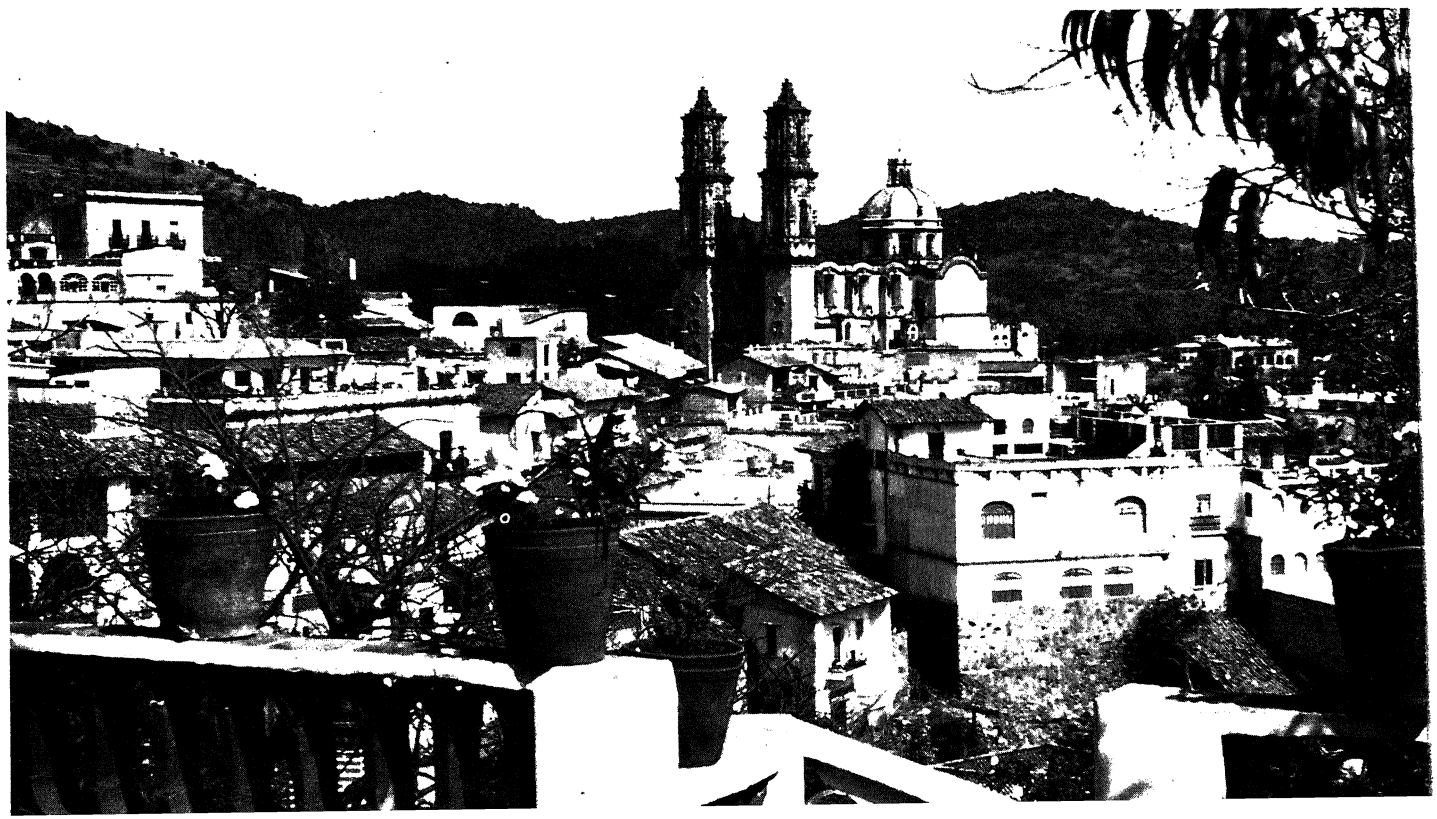


The view from a moving car needs strong accents and bold landmarks



The close-up view of diversity and detail

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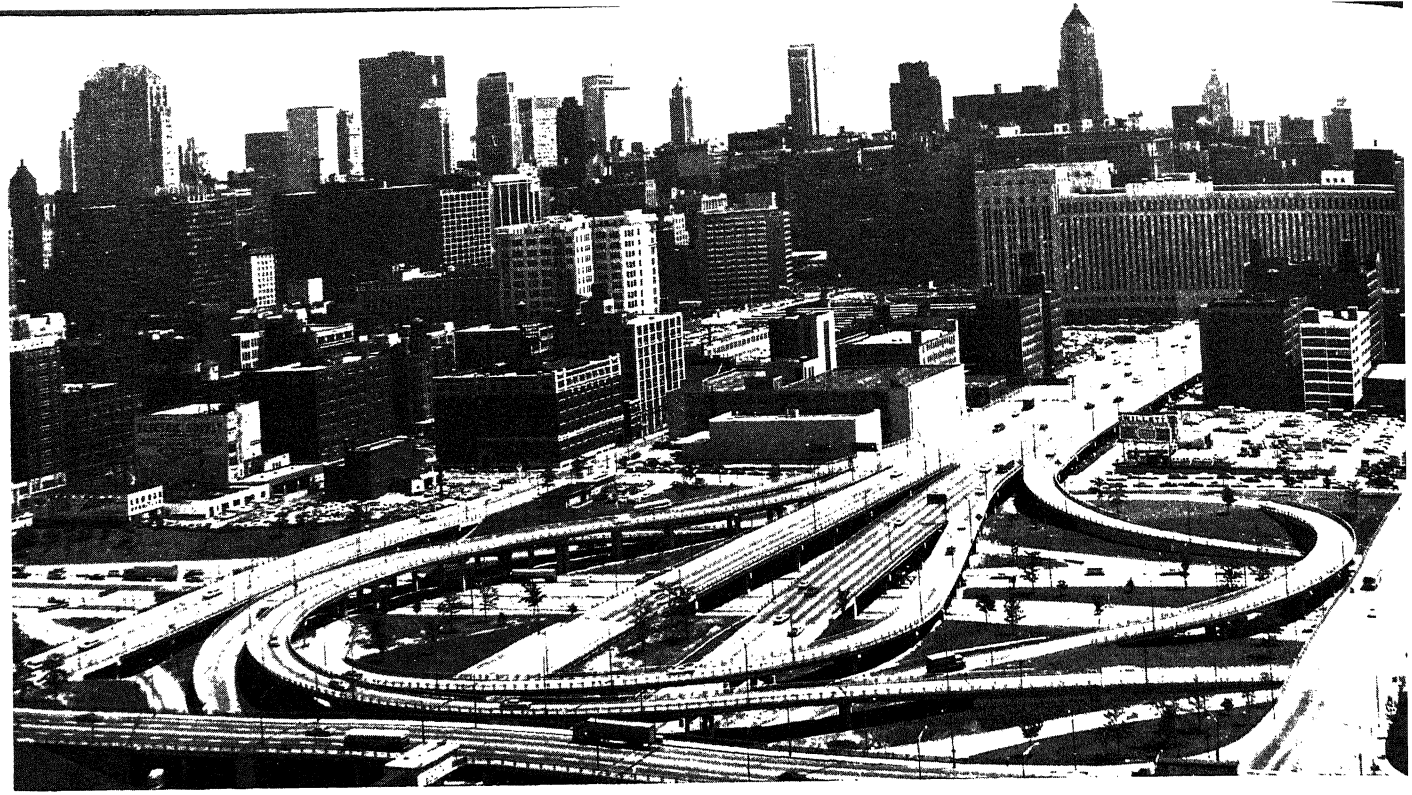
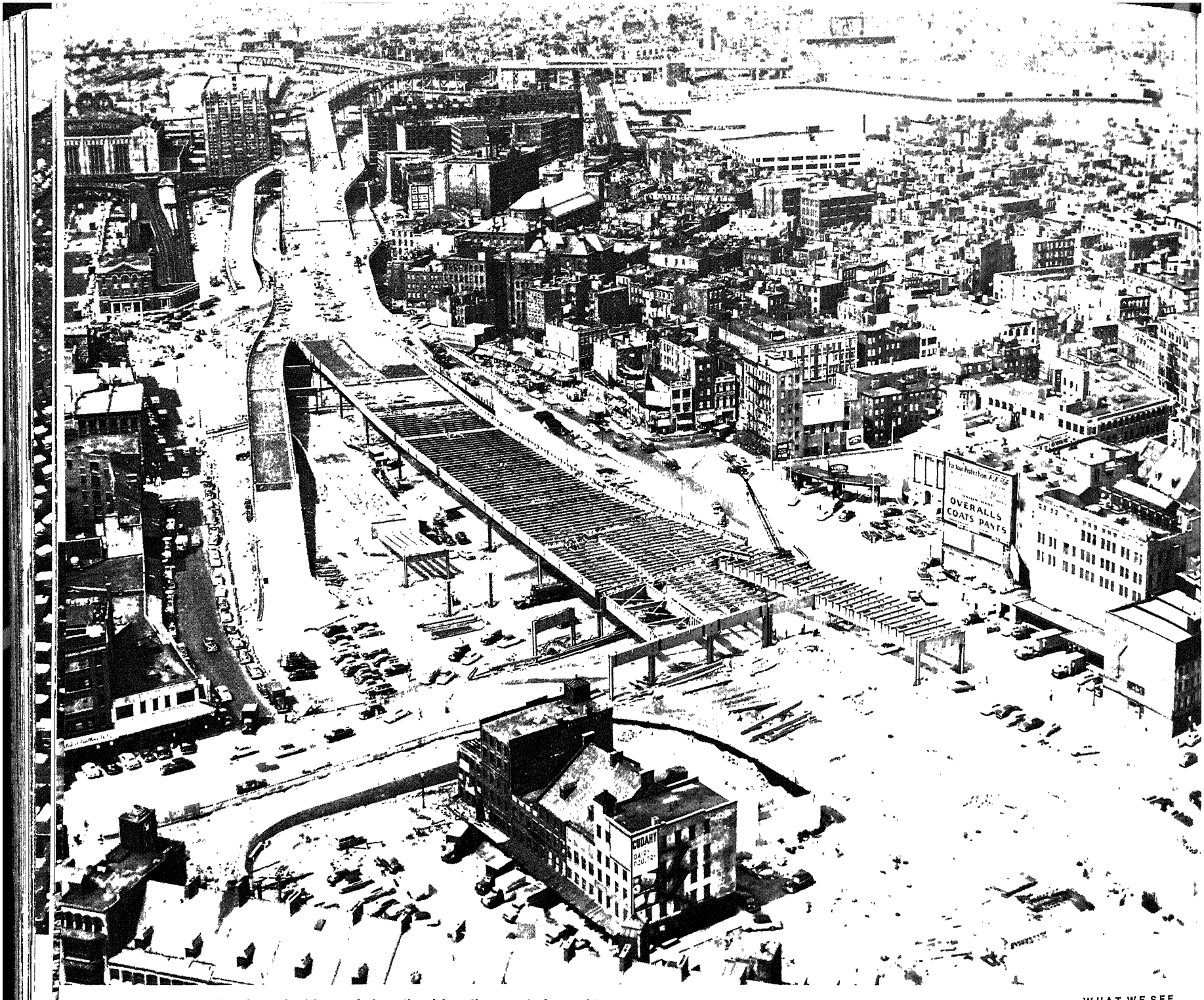


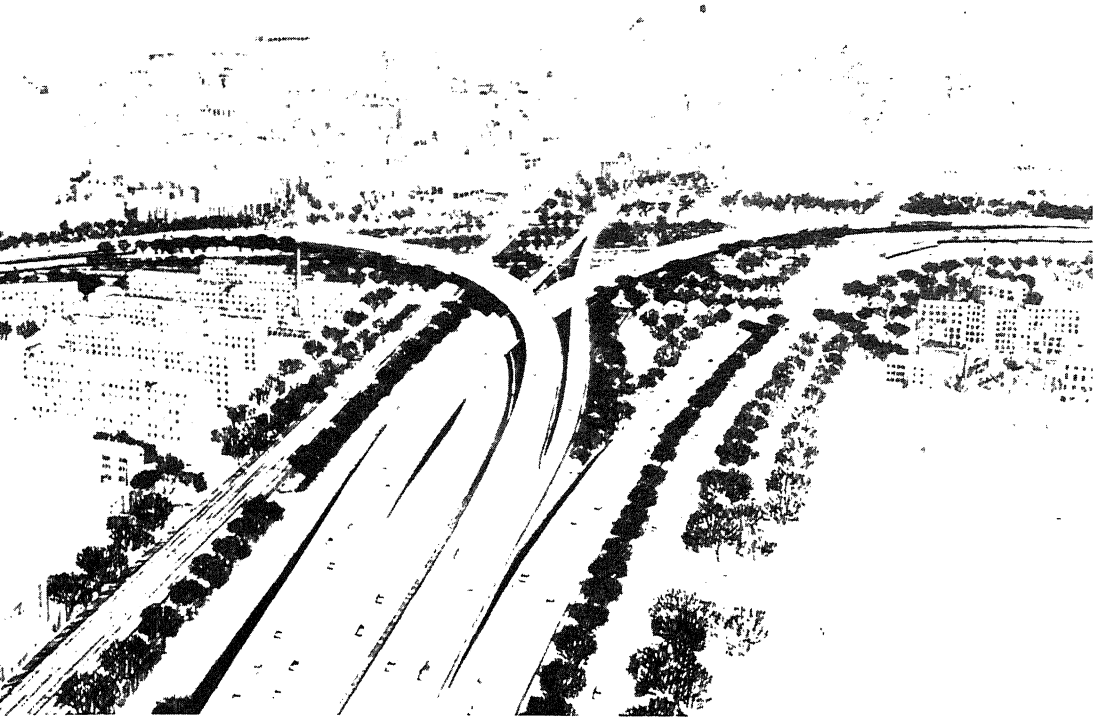
Interchanges are here to stay

Cars are ever-present in cities

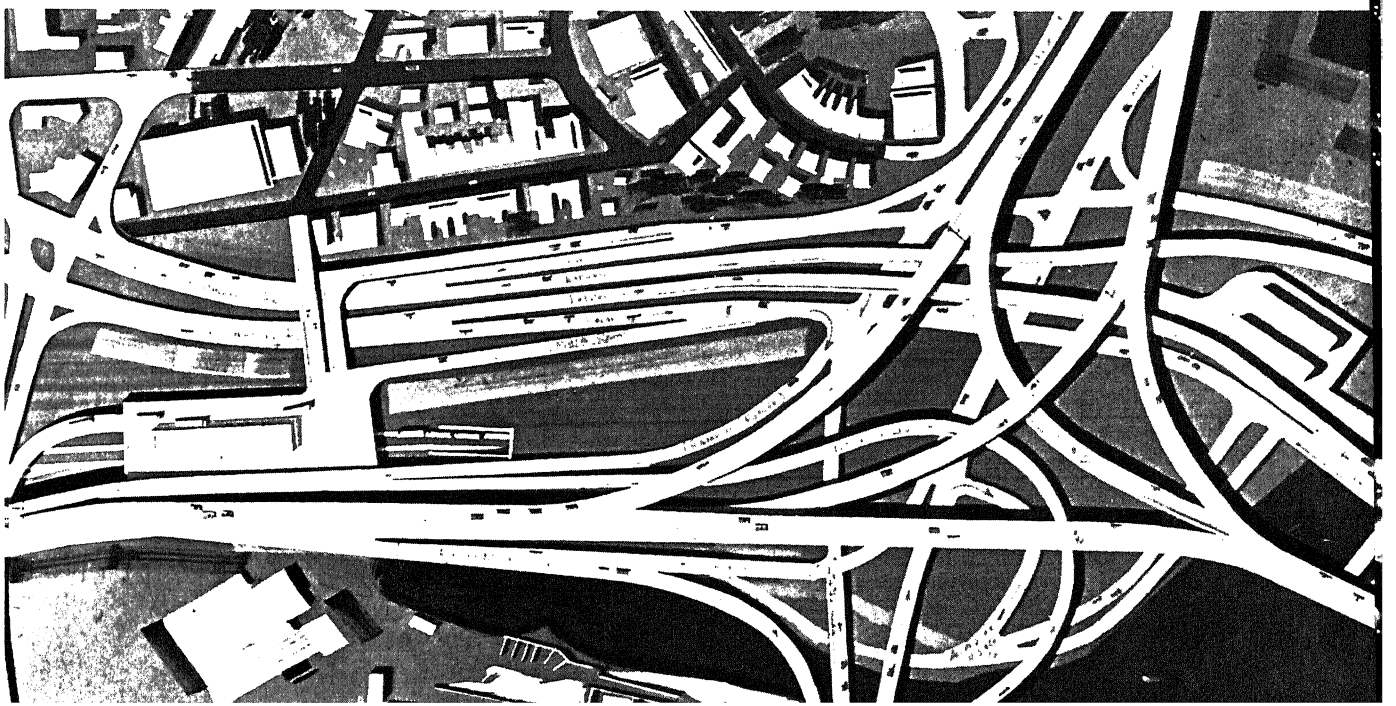
Means of transportation



Highways slice through cities and show the driver the worst views of town



Carefully coordinated studies to integrate highways and city form



E SEE

The View from a Car

Most people drive or ride in a car almost daily; many take the same route to work or in and out of town. This chore can become much more interesting if you train yourself to observe your environment.

First, look at the landmarks and high buildings and decide what is most interesting and why. How would you describe a building to someone else so he could find it and identify it by the way it looks? How many gas stations do you pass and on which side of the road? Try to remember and then check to see if you were right. Which one attracts most attention and why? Do you like the signs and special decorations put up different times of the year, or do you think it would be better if there were just simple, readable signs?

What are the most striking advertisements you see on your way? Why do they stand out? Do you like their colors? Or would you rather do without?

Do you pass an area or stretch of road that you think is really ugly and depressing? Why is it so unattractive to you? Can you think of a way to change it? In turn, which part of the road do you like and why?

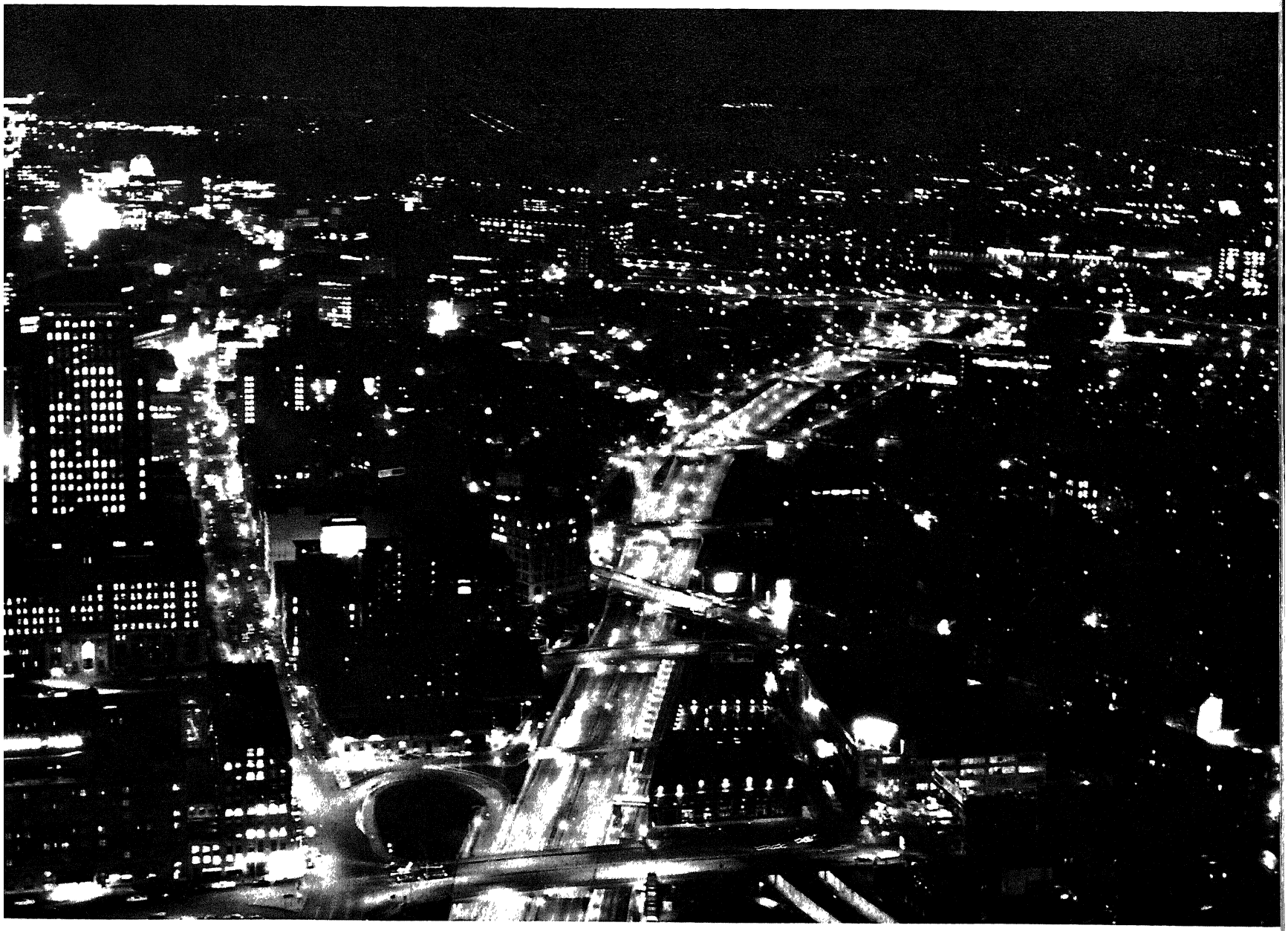
Do you go over any hills with a view, or do you pass an open body of water? How do these change with the seasons and the time of the day? How far can you see from the hilltop on a clear day? Do you enjoy the view? Can you identify the prominent buildings?

From a car you see the environment in sequence. That is, each building you see influences what you see next. Something may seem very big or very small, depending on what you saw just before; that is, you see objects in relation to each other. The same buildings or landmarks also will look different depending on which direction you travel.

Try to observe details: the colors of the other cars on the road make fascinating, ever-changing patterns. Trees and their shadows outline the road. In winter the roof of leaves is broken. Instead, the structure of the trees is outlined against the sky or frames the buildings which are hidden in the summer.

How very different is your accustomed route at night? How does street lighting change the landmarks you know? Part of your way may have new lighting which suffuses everything in an eerie blue. A lake or river along your route provides a great deal of variety. At night the patterns of bobbing, colored light reflections in the water change constantly. The black surface of the water sparkles with light patterns which are animated by the wind or glide along quietly with the movement of your car. On a winter night, the beauty of such a view is a welcome respite from the pressures of the day.

There are many fascinating things to see if we only know how to observe them. You can teach yourself to be perceptive and to see what has beauty in the everyday urban world. A good way to start is to observe along a route that is familiar, on your way to work or in an environment that your eyes have often seen. Try for once to see it also with your mind, to perceive it. You may find that you have never really looked at all. There is much to give you pleasure; and if you are observant you may learn to find some joy and satisfaction in what is otherwise a dull routine.



How very different is the accustomed route at night

CONCLUSION

This book has been designed to establish a link between the function of cities and the physical, visual urban world. By teaching perception, it teaches about those values that are the expression of a civilized society and life. That many of these values are missing from our urban world today is clear if we look at the growing squalor of our central cities, the appalling conditions of life in the slums, and the planless, spreading commercialism on the edges of all towns. It is clear that without real controls over land development the communal purpose of the cities will be lost, and the public recreational use of green spaces on the outskirts of cities soon will be very limited. To really change the conditions of the inner cities requires a dedicated effort of all people who live in a metropolitan area, and also a major investment. If present developments are permitted to continue, the successful and peaceful future of most urban communities is very much in doubt.

Why are the inner cities in such trouble? They have become centers for those excluded from effective participation in economic upward mobility and in city life: the racial minorities, the poor, the aged, the rural newcomers, and those who lack job skills and education. Poverty and ignorance, greed and intolerance thrive in an atmosphere of deprivation that lacks upward mobility and the hope for future change. Inadequate housing, discrimination, and poor schools create more pressures in the city centers. Expectations evoked by both rhetoric and TV have generated the spark for explosion of violence.

The problems of the city surround us here and now; we hold precariously in the balance the future of our urban communities. Will we make it go the way of reason and of education, the way of hope where equality, tolerance, and opportunity are not empty slogans but principles that are taught in every school and upheld by every man? Just because human nature greatly differs and men do not start from an equal base, it is important that each has his own chance for achievement or else all will suffer; everyone is affected if the meaning of our democratic institutions is weakened or undermined.

Housing patterns are important in a city; they are the structure of the urban community. The quality and shape and location of housing greatly influence the way we live. In addition to our family, our friends and neighbors influence what kind of people we become. Diversity of people and ideas and ways of living is one of the positive creative qualities of the city; segregation eliminates the chance for constructive communication. Prejudice and discrimination have stamped the physical layout of all our U. S. cities and have burdened us with desperate problems which no longer can be dealt with by pretending ignorance.

The physical arrangements of the city, its layout, its form and patterns reflect the attitudes of people. In future this attitude must be changed; discrimination and intolerance are not a viable basis for city building.

The lack of good public facilities for education and transportation, health and recreation, and other services most of all affects the poor because they depend on what is provided by the public sector; they have the fewest choices, and they are not able to effect change. What is saved on poor education by the community is paid out over and over again in welfare and the high cost of delinquency. Public services depend on votes and taxes. But middle-class people most able to contribute, as well as industry and business, have left and are leaving the central city, which is caught in a vicious circle of poverty and decreas-

ing revenue in the face of increasing costs of services and government.

The twin tools of affluence and education must be fully used to create a new attitude and basis for a new urban way of life.

Education for urban living is still missing from our school programs rooted in a rural past. Education for urban living and for urban jobs must be shaped to reach many more people who come to the cities in search of a future. In a democratic society education is the ladder of upward mobility, the means of constructive participation in society. Education is a tool of the city and one on which the ultimate success of the urban community depends.

Urbanization has become the key concept of social change that is taking place all over the world and in all countries touched by industrialization. The pull of the city is unequivocal.

In underdeveloped countries everywhere, rural populations pour into the cities in unprecedented numbers, adding to their already staggering economic problems. These landless, homeless, and propertyless squatters settle on all vacant spots in the cities and on their outskirts. Though they live in utter squalor without any services and often even without adequate water in ramshackle buildings made from scrap, these newcomers to the city much prefer this way of life to their rural poverty and isolation. There is some hope for improvement in the city, and there are others to share their problems, while isolation in the country offers only lonely misery. The number of these rural immigrants is increasing in the cities of all underdevelopd countries and multiplying their urban and economic problems. The gap between the haves and the have-nots is steadily widening everywhere. The squatters are a very recent and real manifestation of the difficulties accompanying urbanization and industrialization. So far, these problems have defied most measures to deal with them, because the numbers of people coming to the cities are steadily increasing and outpacing all actions designed to help.

Yet the attraction of the city, of the community of man, is the one hope for the future that still outweighs the problems of urban life. It is this belief in the community on which future cities must be built, cities that are very different from today's. As human institutions often fail us because we are unable or unwilling to adapt them to change, so does the city now reflect our failure to perceive and create new forms to meet the new demands of our time.

We are conquering outer space, and we have overcome many human limitations to grasp the secrets of the universe; we are extending our physical limitations by many ingenious technical tools and inventions. When will we apply this same inventive genius to our living arrangements in the everyday world? Our institutions are shaped by the mind, the will, and the consensus of people, not by an immutable force. It is up to all of us to make the necessary changes in the forms, habits, and institutions that govern our life. Cities now and in the future are the physical arrangements that represent the values of our society and life. Unless we can build better bridges between rich and poor, white and black, power and impotence, education and ignorance, the future of the city as a prime democratic institution is doomed. The time is very late. Technology and affluence are the tools, imagination is the spark, and equality of opportunity the lifeline. We have demonstrated that we possess all these abundantly. Will we use them to create better communities and cities for all the people? We really have no choice.

The urban environment of the future will be very different from that of the past simply because our way of life and our technology are changing: We have a scientific approach and economic means that we never possessed before.

There are no more important decisions than the ones concerning the future of our way of life. We are now faced with creating completely new urban forms for the many new millions who shortly will populate our land.

The decisions we are facing require all our talent, ability, and imagination. But above all they require the courage, courage to try something new. We must abandon the city forms that were designed for the past. This past had none of the technical tools and inventions that have completely changed our lives, all in the short span of two generations since the beginning of the age of electricity.

Research and technology are offering new approaches, new methods, and new tools that have been used and tested in other fields. Computers have many constructive applications in city building, particularly in coping with the multiplicity and complexity of information and data of city life.

Research into the influences of environmental conditions on man is still almost entirely lacking. Information on what constitutes a positive, stimulating human environment is still largely missing, though we know the negative results. Without more knowledge, any major commitment in new city building would

be meaningless guesswork; we need a rational, systematic approach. Planning and design criteria to create a new environment can and must be established by scientific methods, and responses can be tested here and now. Simulation exercises have been successfully conducted in other fields. The aerospace industry can serve as an example in creating a new environment, new materials, and new techniques.

The whole approach presently used in building is utterly and completely obsolete. The building industry still uses time-honored medieval methods, and the design of shelter, of housing, has hardly changed in hundreds of years, in comparison with the rest of our man-made world. It is no longer sufficient to experiment with new building materials, but the very premises of construction as well as what is being built must be re-examined from a fresh point of view.

Industry has developed controls and systems of production, a continuous dynamic process of information and response that could be successfully applied in city building. Like manufacturing, city building is also continuously affected by change though at a different rate. New cities represent an enormous investment in the future in terms of people, energy, and materials: they simply cannot be left to chance or the traditional haphazard methods of urban development, because the old methods are not adequate for the future, just as they have not been successful in the past. There are better methods available now all around us; we must make sure that they are both tested and used.

There are no final answers; the cities of the future must be designed for change. There will be many different cities offering many different choices in keeping with the plurality and variety of people and their tastes and pursuits.

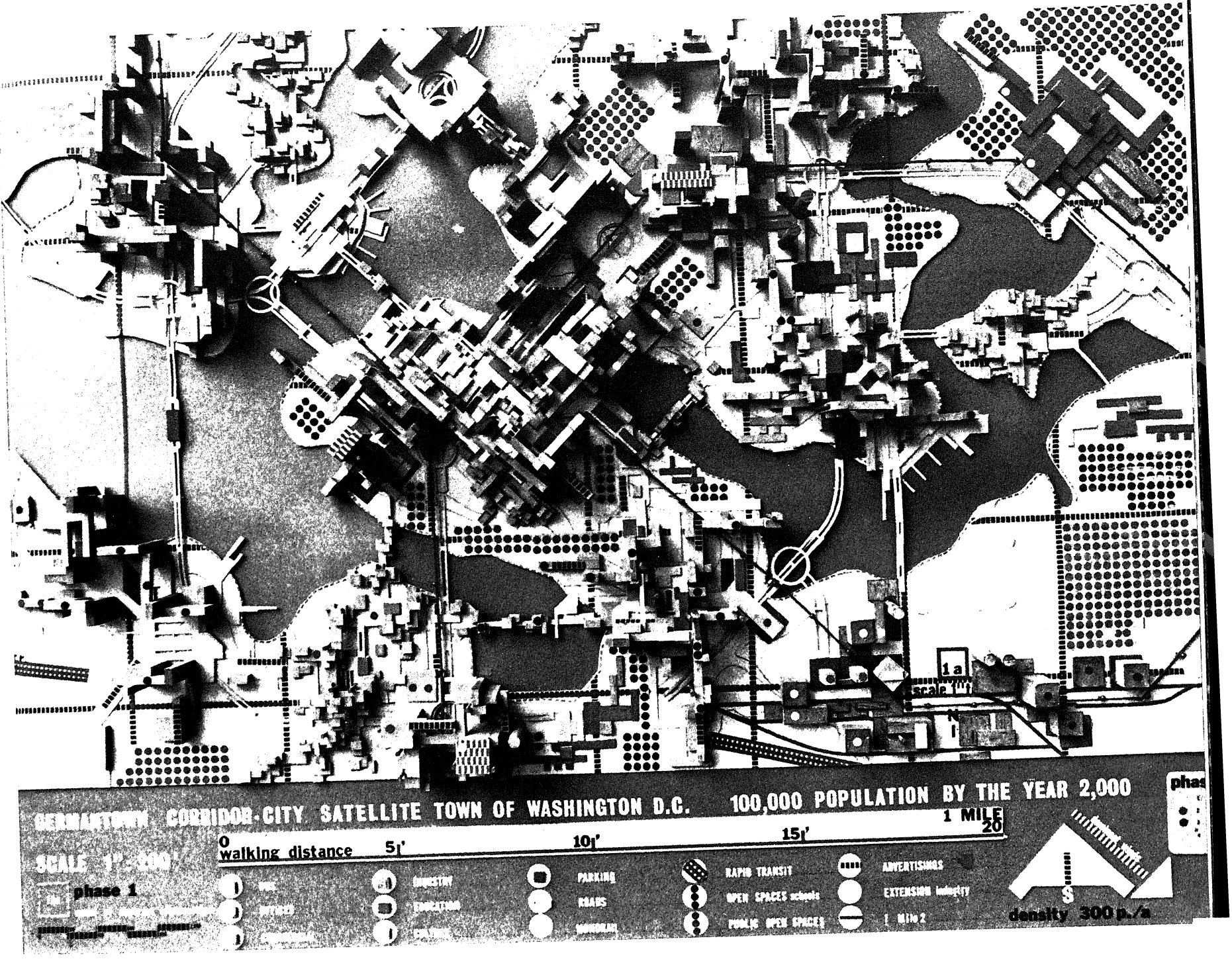
We have the ability to build new towns and cities anywhere we choose; they must be based on sound economic decisions, but they must also be designed to express real human values, harmony and beauty, and they must be open and available to all; they are an integral part of our economic future and our new way of life.

So far, we have lacked the courage and imagination to build cities on a meaningful scale. Building a better and more human environment, that is, new cities, will create thousands of jobs and involve many more people; it will provide useful work and a purposeful participation for all. Construction of new cities could constitute a new economic base, a real stake in the future for millions of people, and constructive involvement for those who are at present left out. It could be instrumental in solving the present very serious urban problems of poverty, lack of jobs and mobility, and most of all segregation. Building new cities and rebuilding our older ones for a better life is a real national goal and commitment that should enlist all those of experience and incite the imagination of the younger generation. This task needs the cooperation of everyone.

We have reached a critical limit in the struggle to adapt old city forms to a new way of life. The old city simply does not work any more. Now that we are about to build new cities for the new millions, it is time to create something really new.

There are many who look into the future with courage, with new ideas and the will to try. Some have started to lay the groundwork to create new forms for a new way of life. That change will not happen without struggle is by now abundantly clear.

We are beginning to perceive a new and better and more human way of living together. We must also find new forms to express the values that are the basis of this new society to come. To shape a new society takes conviction and commitment; to give it form takes vision and belief.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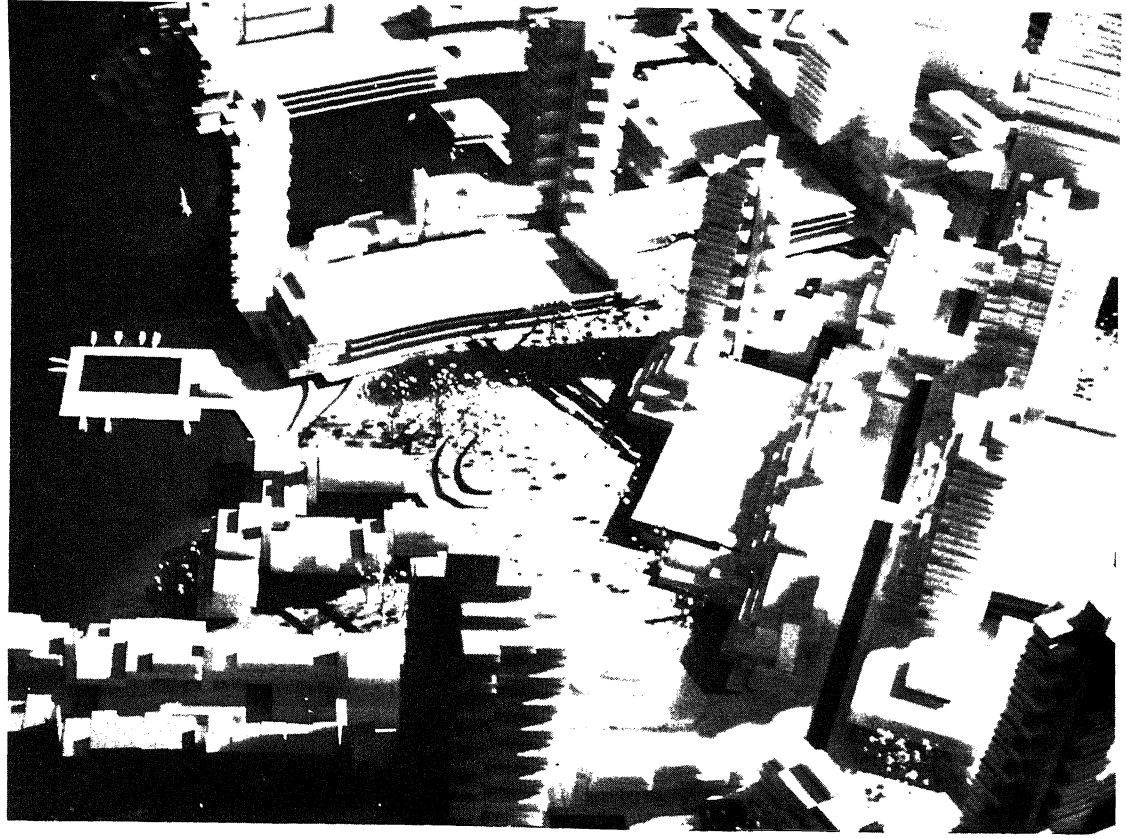
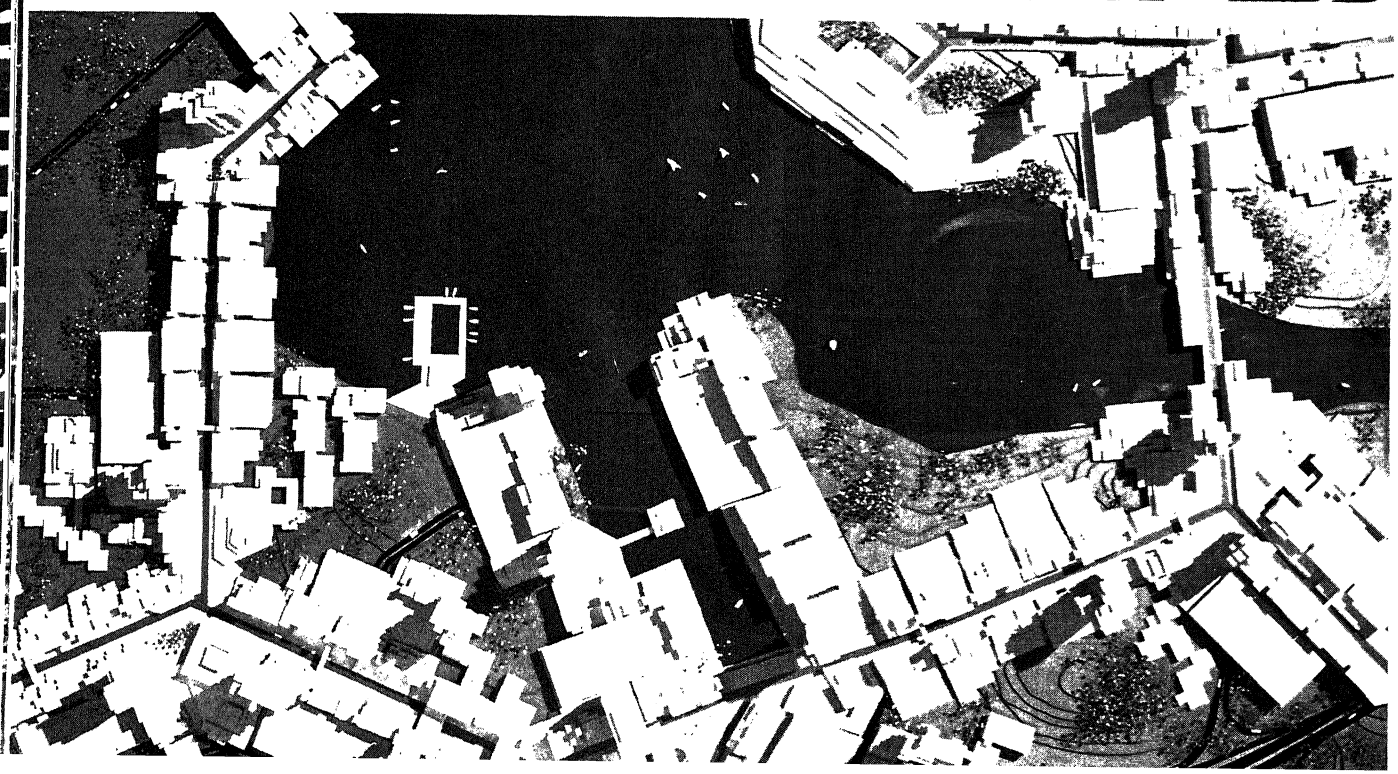
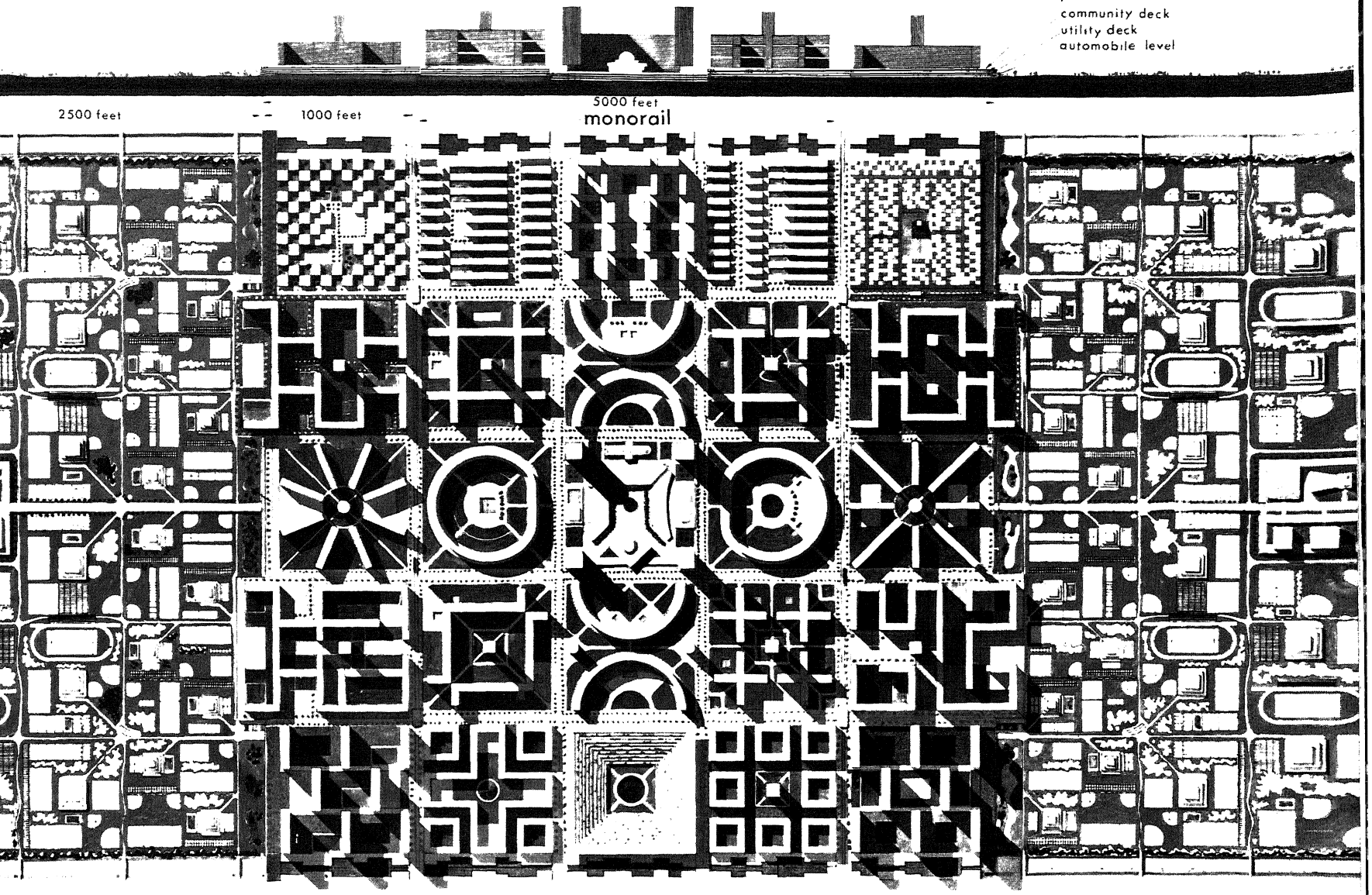




New town project for 250,000
on a 4,000-acre site south of



Holopolis, projected city of the future. Shown here: typical center and neighborhood for 200,000 people (10,000 x 5,000 feet). Walking time from one end to the other is 40 minutes. It includes 44 different schools, parks, and centers for adult education, culture, and recreation.

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Franziska Porges Hosken was born in Austria, studied at the Universities of Vienna and Zurich, then took a B.A. degree at Smith College and her Masters Degree in Architecture at the Harvard University Graduate School of Design. In 1967 she completed two and one-half years of special studies in the Graduate Department of City Planning at the Massachusetts Institute of Technology. Fran Hosken has studied cities and urbanization in developing countries and has widely traveled and written about urban problems all over the world. She has written weekly columns on architecture and city planning for the *Boston Sunday Globe*, and has contributed articles to the *St. Louis Post-Dispatch*, the *Boston Herald*, *Christian Science Monitor*, *Arts and Architecture*, *Architecture Canada* and many other papers and journals.

McGraw-Hill in January 1971 published her tape program, "The Form and Function of Cities," under their Sound Seminars. A summary of these tapes in book form is to be published in Spring 1972 by Schenkman Publishing Company, Cambridge, Mass. At present Fran Hosken is teaching urban studies and setting up an Urban Information Center at the University Without Walls in Roxbury, Massachusetts. She has also been working on the development of a multi-media urban education program and curriculum, "Education for Urban Living," for different grade levels for public schools.

Fran Hosken is a professional photographer and is the owner of Architectural Color Slides, which has been distributing her slides of buildings and cities for over twenty years, mainly to universities for teaching purposes. A number of slide programs, including "The Function of Cities," with texts and teaching guides, were developed by her and are available through her firm, Architectural Color Slides.

For classroom or personal use a series of color sound film strips to complement *The Language of Cities* can be ordered from **Warren Schloat Productions, Pleasantville, New York 10570.** The films, which are from Fran Hosken's worldwide collection, are accompanied by records or cassettes.

Four sets of color slides, "The Visual City," with texts, coordinated with the chapters of this book are available. For information write to:

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